Annual Statistical Edition Covering 1923

A Journal for
Oil and Gas Producers and Field Men

The OIL WEEKLY

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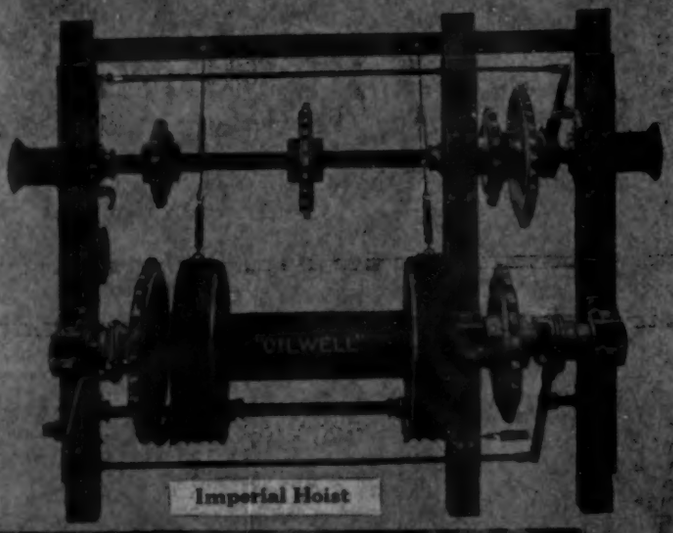

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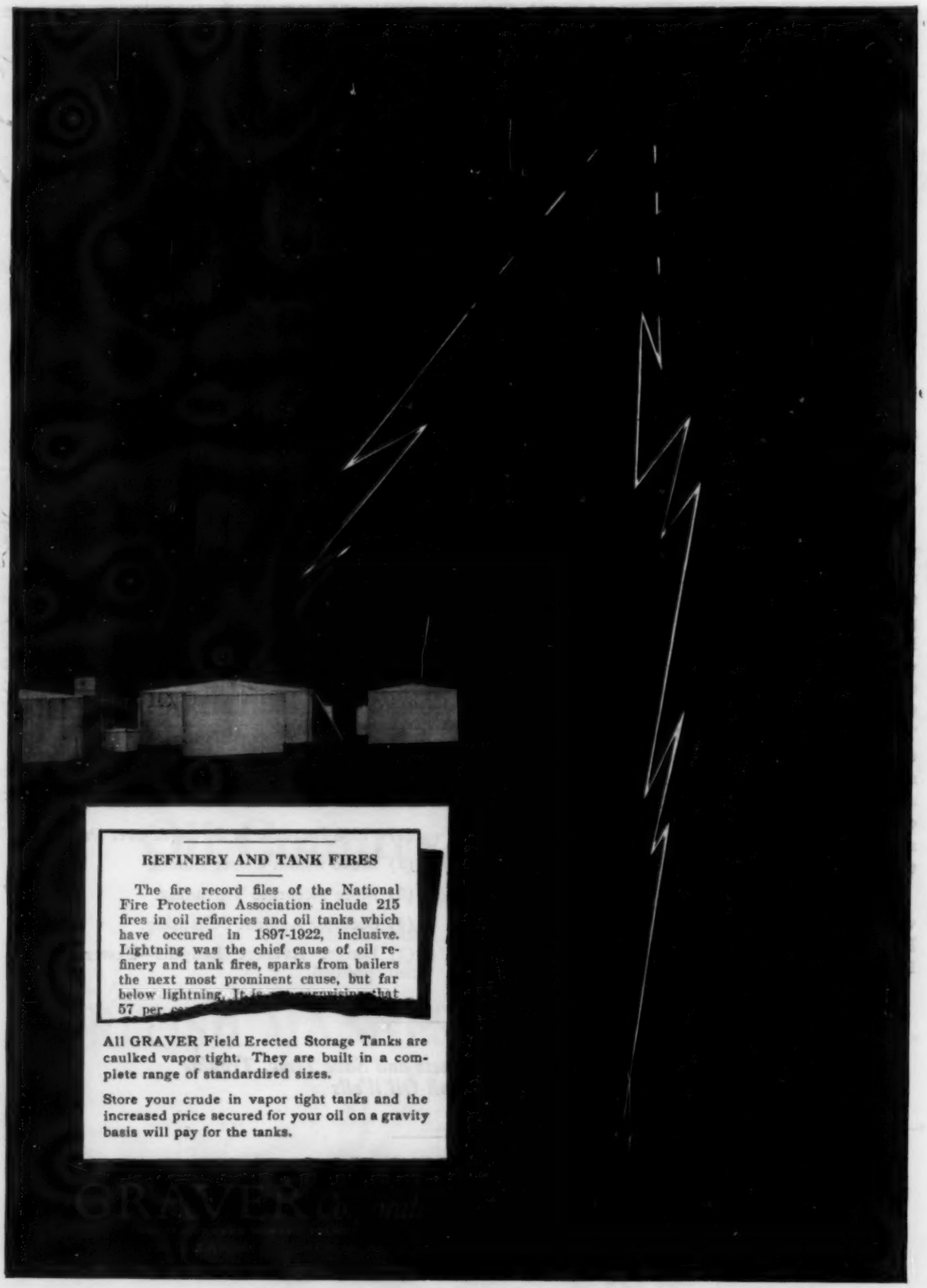
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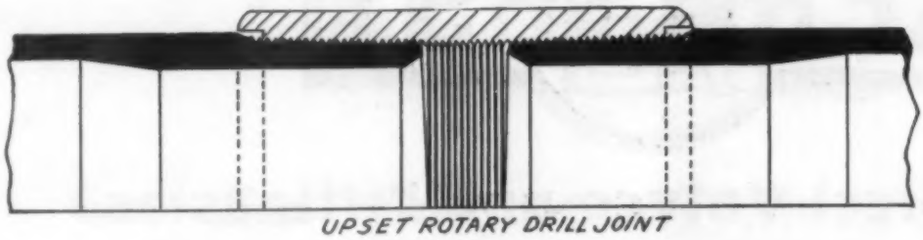
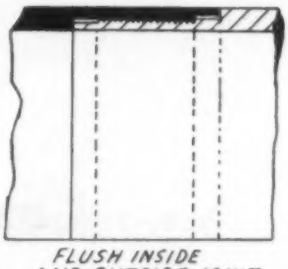


UPSET ROTARY DRILL JOINT



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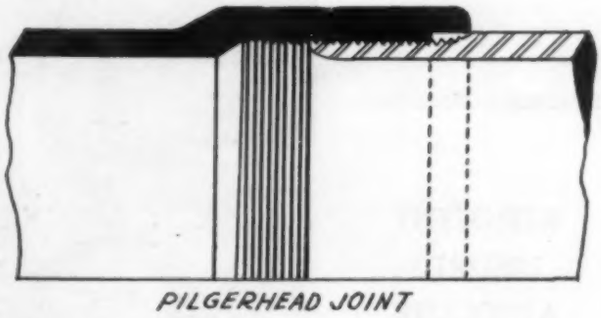

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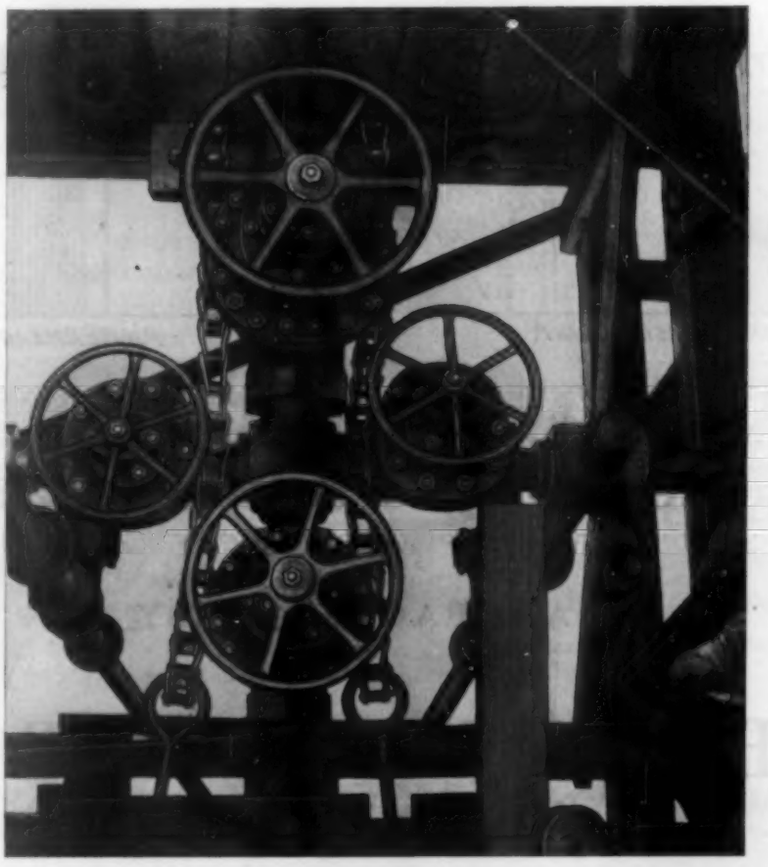

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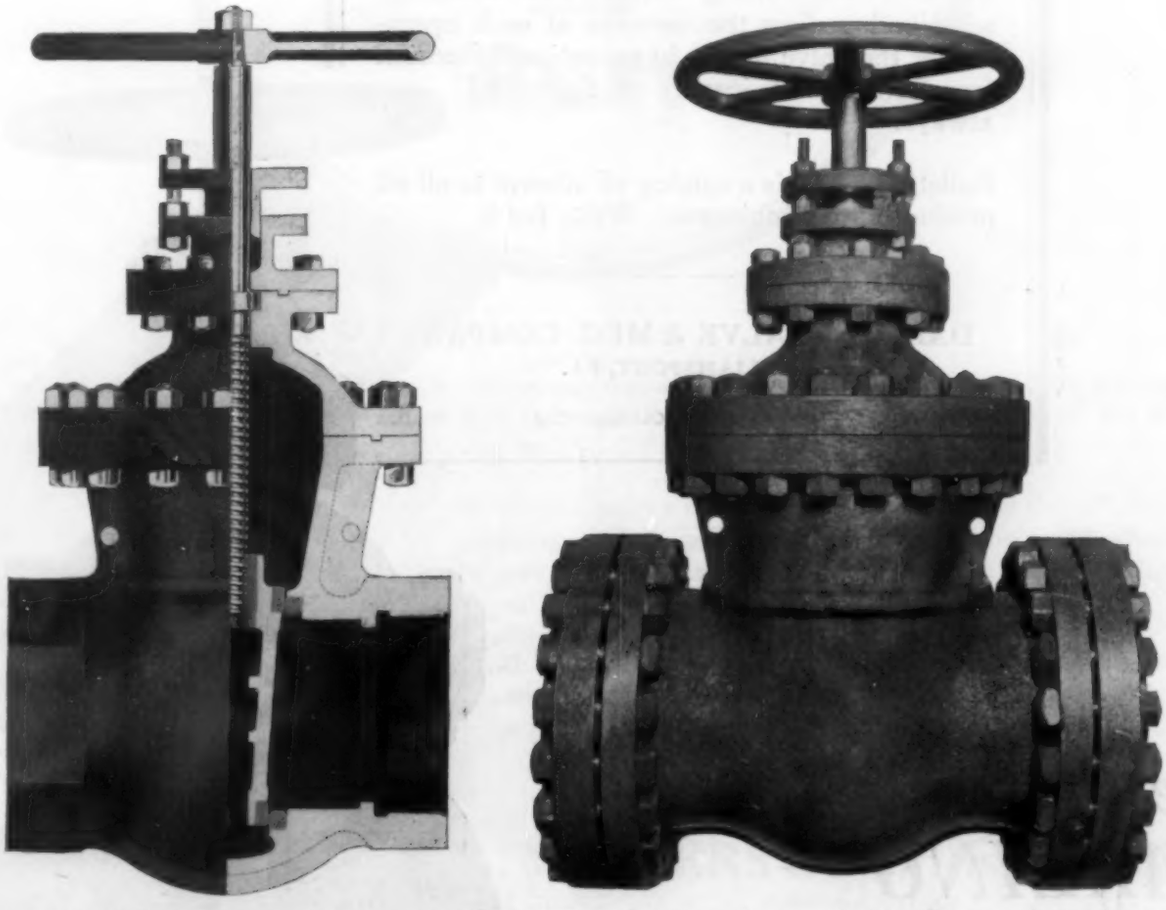

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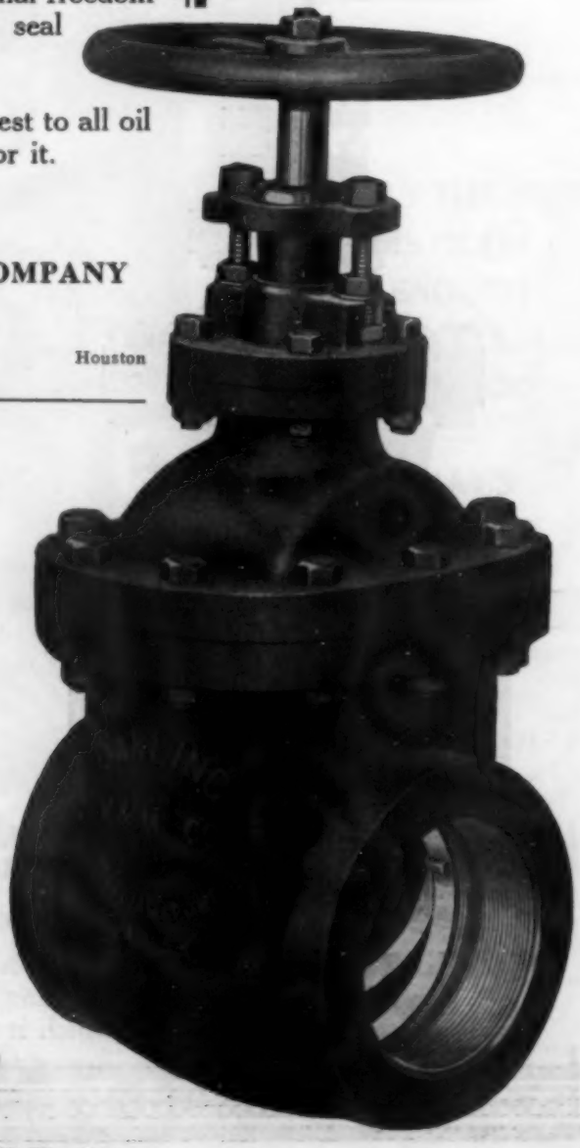

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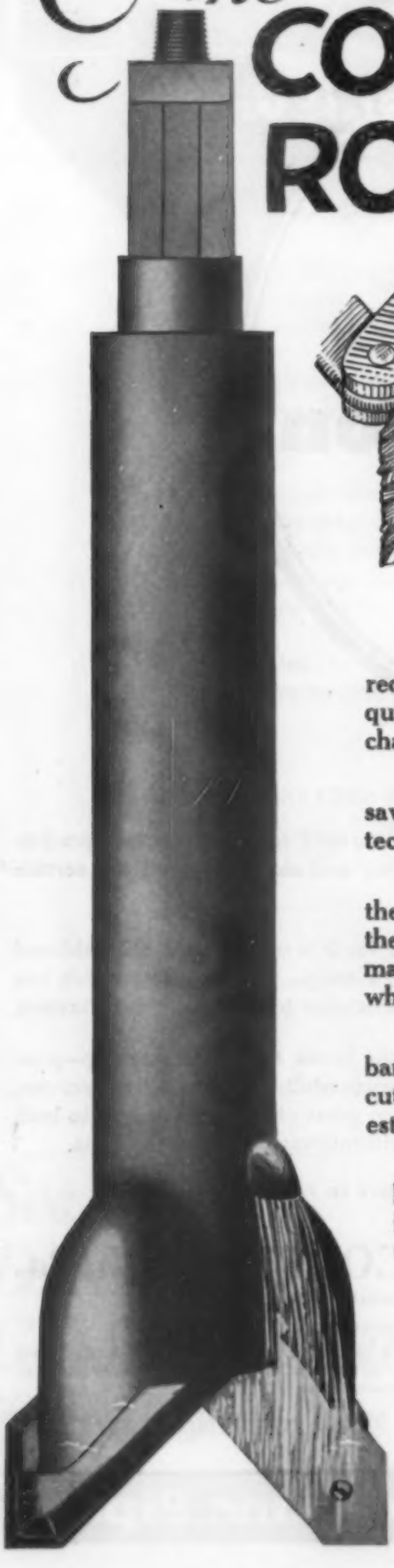

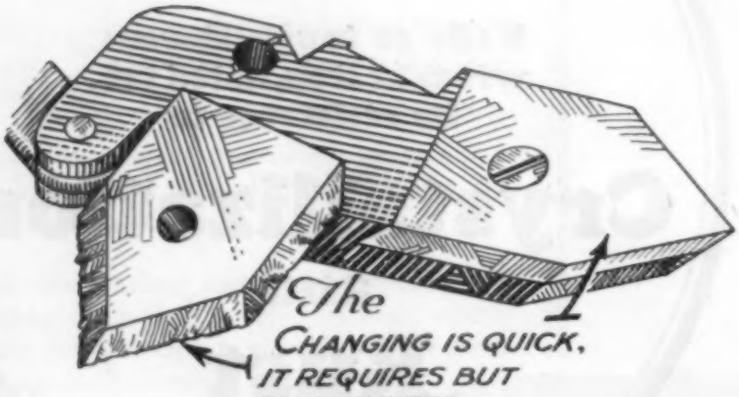

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Vol. 32 SATURDAY, JANUARY 19, 1924 No. 4

In this issue.

The Year 1924

What does it hold for the Oil Industry? All indications point toward a prosperous 12 months and from a production standpoint 1924 should be one of the best years yet experienced in the business. The Statistical Edition sums up the past year's activity and presents some very interesting forecasts for the present year.

Foreign Outlook

A review of the oil industry in foreign districts during 1923 clearly shows that depression experienced in the United States was not only confined to this country. Foreign fields played only a minor part during 1923 but much prospecting work has been planned for these sections and 1924 should see some results.

In the Future

All authorities are agreed that sometime in the future there will be a shortage of oil and much fear is expressed as to what will be the result. An article in the Engineering section on "Oil Mining" tells how production will be prolonged after oil wells have ceased to give up their flow. This method of oil production, which is a step farther in the direction of scientific oil operation, is now being used in some of the older producing sections of foreign countries. Illustrations show how oil is mined.

Told at a Glance

The chart section of the Statistical Edition puts in pictures what really took place in the industry in 1923. This section begins on page 50 and the charts are so arranged that they may be taken from the book for future reference.

Improved Methods

of drilling will play an important part in this year's development of California fields, and will no doubt help that state to maintain a good daily average output, according to R. E. Collom, who tells some of the things that will be met by California operators during the next few months.

California Prospects

Since California furnished the condition which was directly responsible for the demoralized crude market during 1923, special attention has been given to a study of the possibilities of that state in 1924. Just what can be expected of the West Coast from a production angle is given in an article in this issue by Joseph Jensen, which has been worked up after much research and scientific study.

Statistics

And there are lots of 'em beginning on page 67. Among the features of this section are tables showing the world production of oil from the beginning to the first of 1924, production of various United States sections since the first well was completed, production by fields for California and Texas, and field statistics covering the country.

What It Costs

To drill a well and complete it in various fields is shown by itemized figures in the "Drilling Costs Section," which also gives some interesting sidelights on how the operating expense curve has changed during the past few years.

Statistical Features

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KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

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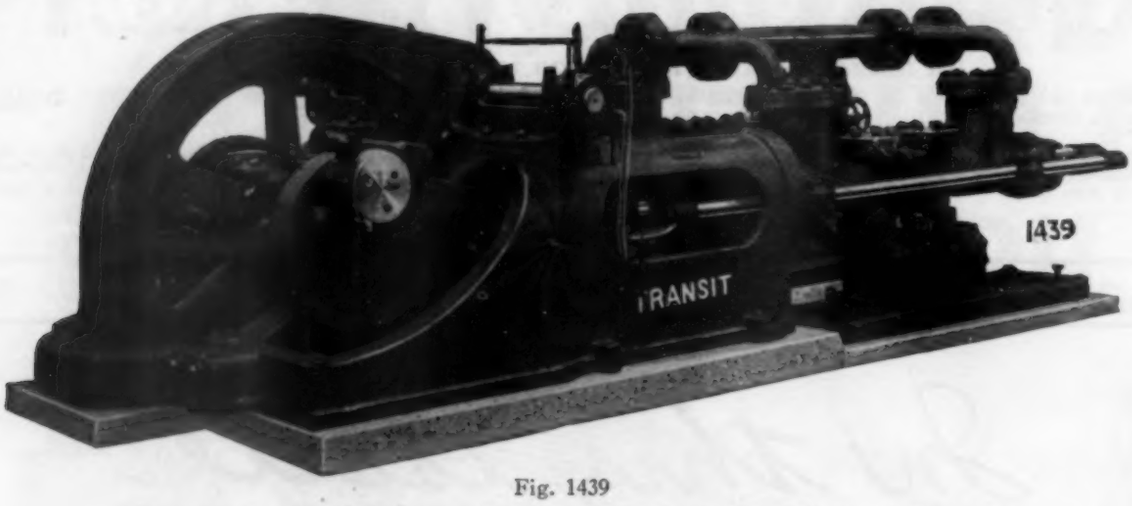

Fig. 1439

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An International Oil Publication for Oil Producers

ESTABLISHED 1916 — MEMBER AUDIT BUREAU OF CIRCULATION — VOL. XXXII-No. 4

Nineteen Twenty-four

Elsewhere in this issue will be found two estimates as to the production trend during 1924 in the United States. While both are but mere estimates, they both indicate a good year ahead for the oil industry.

Both have been compiled with all of the information in use which two rather extensive organizations could secure. These estimates are not given as what **will** happen, but rather as estimates as to what **probably** will happen. One goes into detail, while another is a simple estimate for the entire country each month during 1924.

To use the significant thing about the estimates is the fact that these two widely separated statisticians have both agreed on a decrease in production for 1924 that will undoubtedly mean a withdrawal from stocks during this year.

Some interesting details are gone into with reference to consumption. It seems to be agreed generally among automobile manufacturers that the saturation point in automobile ownership is not reached, and the figure placed as the saturation point is sufficiently high enough to permit the estimate for next year to be reasonable.

It is the duty of the business paper of every industry to keep that industry informed as to what has happened and what, in the opinion of the thinkers of the industry, will happen. The OIL WEEKLY would, therefore, be at serious fault if it did not say at this time that the thing which the leaders of the industry most fear is a "drill your head off" campaign. Such a campaign could easily convert 1924 into a year of blasted hopes.

Undoubtedly, it will be necessary to do a lot of drilling during 1924 to hold production up to the point most desired. But it should be remembered that 1923 was a bad year for the producer despite a heavy consumption and that over-drilling was the cause of the overproduction.

The Record Breaking Year

Nineteen hundred and twenty three was a record-breaking year as well as a heart-breaking year. New marks were reached in production for the nation; new marks for sudden outpouring of flush production, and new marks were set for low price-as-compared-to-cost markets.

There are not a great many oil companies that would eagerly go through with what they went through with in 1923. And fewer supply companies.

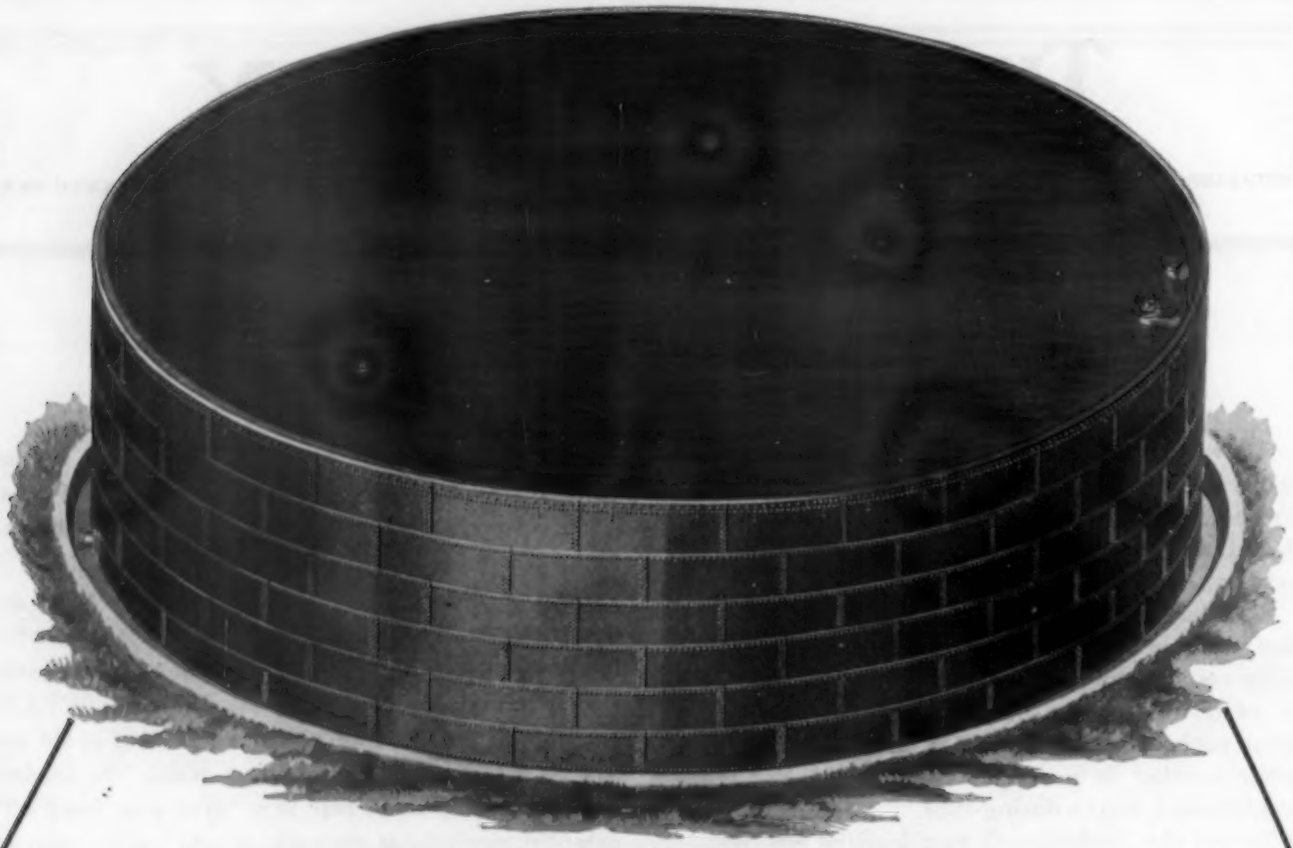
It is not likely that the country will ever face such an overproduction as compared to a record-breaking consumption. For the nation to see records going to smash in two to three sections of the country almost simultaneously is something that doesn't happen often.

And in the future—we say it with a great deal of hope in our hearts—as we sit by the fireside and hear the youngsters talk about what the oil business is doing we can always have the satisfaction of knowing that the conversation is ours when we start off with:

"Now back in 1923 when Signal Hill, Santa Fe Springs, Powell, Tonkawa and Smackover were cutting loose at one time, we had a real situation to cope with."

The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or sub-branches of the producing and pipe line business. It has no desire for investor circulation, and it reserves the right and will exercise the right to reject subscriptions coming from persons whose only interest in the oil industry is through the purchase of oil stock.

R. L. DUDLEY, Publisher.



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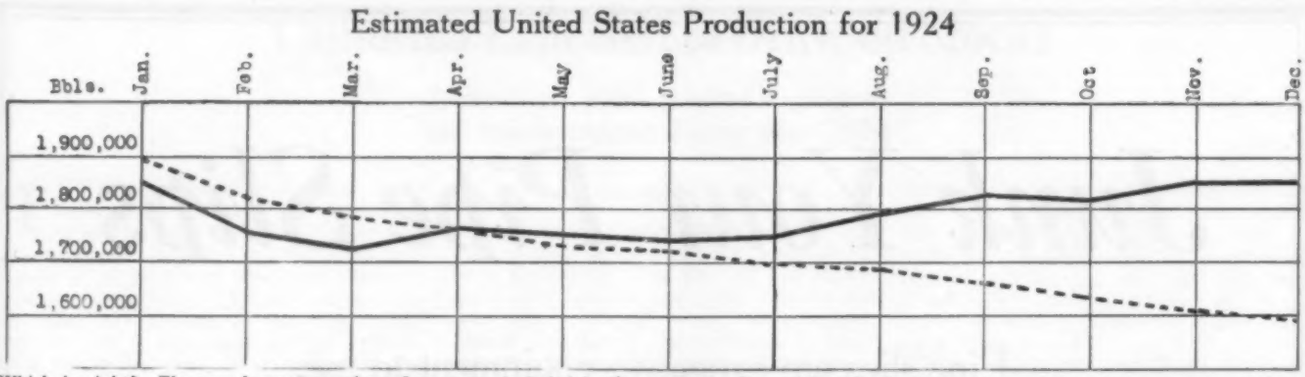

Which is right? The two forecasters whose figures are included in the accompanying article differ in their estimates of the daily average production for U. S. fields in 1924 as shown by the above chart. The broken line represents estimate No. 1 as referred to in the story, while the heavy line is the forecast of No. 2

Two Statisticians Estimate 1924 Trend

Production curve for this year shows sharp decline while consumption is projected upward

AT THE request of The OIL WEEKLY, two statisticians, who enjoy rather good reputation, have consented to prepare each an estimate as to what the probable trend of oil production in the United States will be. Necessarily, such estimates are largely guesses, but they are guesses based upon every bit of available information which two widely known organizations have at hand. They do not agree in detail, but they do agree as to a more or less substantial slump in production.

Inasmuch as no oil publication, or oil company, either, for that, has ever presented the production curve projected a year ahead, each of these statisticians reminds us that it is human to err, and that they didn't care to stake their reputations on a forecast that far ahead.

To which we replied that it would be interesting to the industry and the public at large to see how close a statistician could come to the real figures as much as a year ahead, and that certainly it would be interesting to have these estimated figures when both were considered authorities who have every facility of gathering as much advance information as possible. In the instance of one of the estimates with which The OIL WEEKLY'S editor happens to have a rather close touch, the figures shown represent information gathered from a number of the best informed oil company statistical departments in the United States, and we feel fully confident as to the news-gathering value of the other statistician.

The name of the statistician who comes close to the actual figures (if he comes close enough) will be printed in next year's Annual Statistical Edition.

The estimate of forecaster No. 1, with explanation, follows:

"Oklahoma production is estimated at 365,000 barrels for January, 1924. With no new production, this will be down to 290,000 barrels by the first of 1925. Allowance of 60,000 barrels has been made to take care of new production.

"Kansas has been estimated on the same basis as Oklahoma, with a margin for new production.

"North Texas is estimated to decrease from its present production, but new production in Archer County and small production in adjoining counties will help to maintain its present production, which is around 63,000 barrels, until the last quarter of 1924, when the flush will be over.

"Ranger production is estimated at 44,000 barrels. It is thought that the actual figures will be considerably below this amount, but approximately 8000 barrels have been allowed for new discoveries.

"North Louisiana will show decreases and there is nothing in sight upon which to base a margin for new production.

"The Gulf Coast region of Texas is expected to show a slight increase, but production in this area is not expected to exceed 80,000 barrels per day

"Miscellaneous South Texas fields are not estimated to go over 35,000 barrels. Allowance has been made for production that may be found along the Luling fault. Mirando and Somerset are not expected to show increases.

"Eastern States, it is thought, will decline to approximately 105,000 barrels.

"Wyoming and Montana will be

1924 Production Estimated by Fields

	Jan.	Feb.	March	April	May	June	July	August	September	October	November	December
Oklahoma	365,000	355,000	350,000	355,000	360,000	360,000	350,000	350,000	345,000	345,000	340,000	340,000
Kansas	71,000	70,500	70,000	69,000	68,000	67,500	67,000	67,000	66,500	66,000	65,500	65,000
North Texas	63,250	63,000	63,000	64,000	64,000	64,000	64,000	64,000	63,000	63,000	62,000	61,000
Ranger	43,750	44,000	44,000	43,000	43,000	43,000	42,500	42,000	42,000	41,000	41,000	41,500
Mexia, Powell, etc.	126,000	124,000	123,000	122,000	121,000	120,000	118,000	117,000	117,000	116,000	115,000	115,000
North Louisiana	53,750	53,000	52,000	51,000	50,500	50,000	49,000	48,500	48,000	47,000	46,000	45,000
Gulf Coast	73,000	75,000	76,000	78,000	79,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Miscellaneous South Texas	16,000	17,000	19,000	21,000	23,000	25,000	30,000	32,500	33,000	34,000	34,500	35,000
Eastern States	109,000	109,000	108,000	108,000	107,500	107,000	107,000	106,500	106,000	106,000	105,500	105,000
Wyo. and Mont.	155,000	150,000	145,000	142,500	140,000	140,000	137,500	137,500	135,000	135,000	132,500	132,000
California	705,000	650,000	640,000	610,000	593,000	575,000	365,000	560,000	550,000	520,000	510,000	500,000
Arkansas	116,000	110,000	105,000	100,000	97,500	95,000	94,000	93,000	90,000	87,500	85,000	80,000
Total	1,896,750	1,821,500	1,795,000	1,763,500	1,743,500	1,726,500	1,704,000	1,698,000	1,675,500	1,640,500	1,617,000	1,599,500
Imports	220,000	205,000	200,000	200,000	195,000	190,000	190,000	185,000	184,000	180,000	177,500	175,000
	2,116,750	2,026,500	1,995,000	1,963,500	1,938,500	1,916,500	1,894,000	1,883,000	1,859,500	1,820,500	1,794,500	1,774,500
Consumption	2,040,000	1,950,000	2,050,000	2,075,000	2,125,000	2,125,000	2,250,000	2,300,000	2,250,000	2,225,000	2,225,000	2,225,000
	¶76,750	¶76,500	*55,000	*111,500	*186,500	*208,500	*356,000	*417,000	*390,500	*404,500	*430,500	*450,500
Monthly storage changes	¶2,371,500	¶2,218,500	*1,705,000	*3,345,000	*5,771,000	*6,245,000	11,036,000	*12,927,000	*11,715,000	*12,539,500	*12,900,000	*13,965,500

455,000,000 Oil in storage January—all oil, refined, crude, etc.
4,590,000 Added first two months.

459,590,000 Stocks at end of February.
92,149,500 Withdrawal from stocks.

367,440,500 Stocks December 31, 1924.

¶Daily addition to storage.
*Taken from storage.

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California Expected to Draw on Stocks

Indications point toward a substantial loss in output during year 1924

*By Joseph Jensen**

THE fear is widespread that California stands ready like a gusher to discharge a flood of oil that will again demoralize the markets of the world at almost any time and without notice or warning. All that is needed to start the deluge is the accidental tapping of a few new fields. While this might be true, it is necessary to have the place where the new fields may be found. The three essentials of an oil field: namely, a townsite, a brick yard and a cemetery of course, have not all been exhausted. The diligence of the California subdivider so far exceeds the activity of the brickmaker, that a certain disproportion in these two essentials has resulted. No native or adopted son of the Golden West would intimate for a moment that California's climate could cause a need for more cemeteries, so the chance for finding new fields is more limited than it was in 1919, 1920 or 1921, when the three banner fields—Santa Fe Springs, Huntington Beach and Long Beach—came into being.

Three Kinds

California oil prospecting has been of three kinds. The first has been that based solely on guesses or hunches. It has found an occasional oil field, but never was and cannot be sufficient to even partially supply the need for new oil that is essential to maintain the state's production at any given amount. The second type has been that of the practical oil man based on seepages and other visible evidence of oil. In the last eight to 10 years, no field of importance has been developed as a result of this type of prospecting. In the period from 1859 to 1900 and even 1910, it resulted in finding most of the fields. Since 1915, prospecting based on geological studies has resulted in finding every important field that has been developed in the state. In some instances, the practical operator responsible for the discovery had in fact trained himself to be a geologist. The files of too many geologists contain favorable reports on the Santa Fe Springs, Huntington Beach and Long Beach fields to permit the view that mere chance was responsible for the discovery of these fields. Drilling based on geological study represents the third type of prospecting.

JOSEPH JENSEN

The first type of prospecting is being followed most actively today in Southern California. There is virtually none of the second type and only a fair amount of the third. As the first type of prospecting has always been an unimportant factor in the California oil industry, it should continue so. The second type of prospectnig has not brought forth satisfactory results for so long that in view of its former success, one must feel that nearly all of the particular type of oil deposits to whose discovery it lent itself have been found.

In a triangular area 30 by 45 by 50 miles, such as the Los Angeles Basin, the finding of an accumulation of oil safely eliminates at least 15 to 40 square miles of land as a possible further source of oil. There are already 16 or 17 distinct occurrences of oil in the Basin. The many flourishing communities established in the district also serve to eliminate a part of this triangular area as a possible future source of oil. Assuming that a range of mountains formerly existed along the coast line, it will be observed that all of these 17 districts occupy an outer or an inner rim of the Basin. The district in which oil fields have not yet been found is the center of the Basin which was the dumping grounds for sediments from all sides. Drilling in the deep fill in the center of the Basin is neither type two nor type three of the prospecting outlined above.

The finding of oil in cores from wells in the center of the Basin is slowly and at great expense being understood to mean that the occurrence of oil is widespread. But as a swallow does not make a spring, neither does a core with an oil showing make an oil field. A favorable structure is necessary for the oil to accumulate in commercial quantity. Cores do not furnish such evidence. The same sort of situation on a larger scale exists in the San Joaquin valley. There are enough favorable places in which to hunt however around the rim of these basins and in the intervening country that prospecting with favorable results at intervals may still confidently be expected.

Peak Probably Passed

Yet one should not feel chagrined nor unwilling to recognize the fact that just as Pennsylvania, Ohio, Indiana and Illinois have passed their peak of production, so too California in 1923 probably passed its peak of production. It was quite as difficult for the California gold miner nearly 40 to 50 years ago to realize this fact in his industry as it may be for some of us to accept it in ours today.

One can scarcely look at the table of production by years herewith, and the curve of production shown later for the years 1920 to 1924, without being convinced that the production of 1923 over 1921 was 25 per cent. Such unusual circumstances could cause it to be duplicated again. Actual production of 1923 was twice that of 1922 even though 1923 shut in production amounted to one-fifth of the 1922 output. The increase in production for 1923 over 1921 wat 25 per cent. Such percentage of increase has only been shown prior to 1910 in the state. The increase of 1923 over 1922 was 100

*Geologist Associated and Pacific Oil Companies.

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down to 130,000 barrels by the middle of the year and will go below 120,000 barrels by the end of December. New production is predicted to the amount of 10,000 barrels.

"A small amount of new production in Arkansas is anticipated.

"The average for California places the maximum production for January at 705,000. This amount may be high, as production reports show the state to be down to 700,000 barrels now. As to the production for California throughout the year, it will be noted that June production has been reduced to 575,000 barrels, and by December it is predicted that the figures will show approximately 500,000 barrels.

"Imports have been estimated at 220,000 barrels. This is believed to be fairly accurate in the face of conditions in Mexico, the country from which we import 63 per cent of their total production.

"Consumption has been left practically as it was during 1923, with an increase of about 10 per cent. This is thought to be a very conservative estimate, as consumption during 1923 was over 20 per cent greater than in 1922."

The second estimate merely gives the amounts without any comments or conditions:

Period—	Barrels
January	57,500,000
February	51,100,000
March	53,800,000
April	53,100,000
May	54,700,000
June	52,700,000
July	54,500,000
August	55,000,000
September	54,900,000
October	56,500,000
November	55,700,000
December	57,600,000
Total 1924	657,100,000
Total 1923	722,000,000

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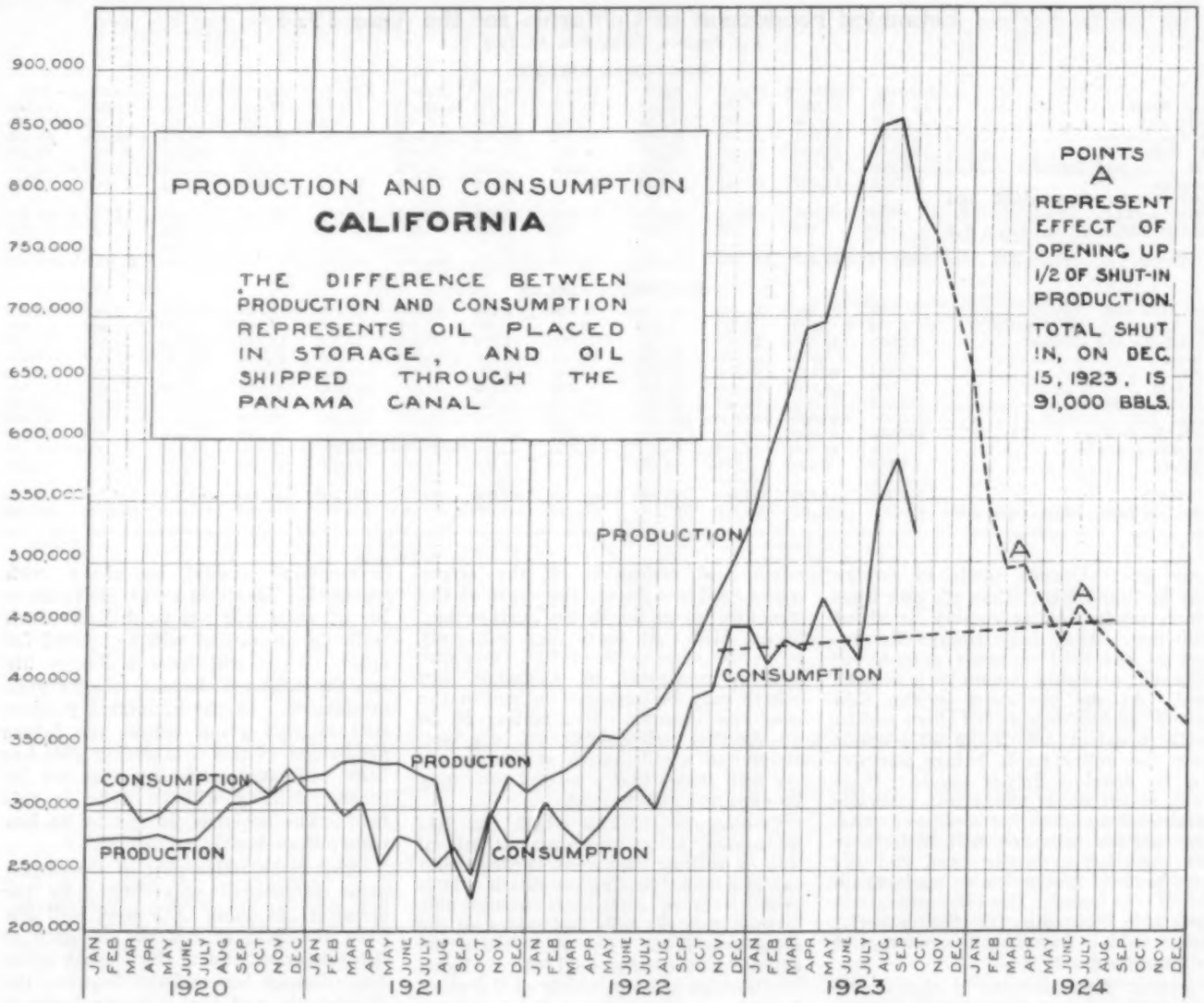


per cent. Production of 1923 was more than one-seventh of all the oil the state has ever produced.

Prior to—

1895	5,551,528
1896	1,257,780
1897	1,911,569
1898	2,249,088
1899	2,677,875
1900	4,319,950
1901	7,710,315
1895	1,245,339
1902	14,356,910
1903	24,334,481
1904	29,548,634
1905	34,298,041
1906	32,623,229
1907	40,102,512
1908	48,306,737
1909	58,191,723
1910	77,697,568
1911	83,744,044
1912	90,074,439
1913	97,867,184
1914	103,623,695
1915	89,566,779
1916	91,822,362
1917	97,267,832
1918	101,637,870
1919	101,221,784
1920	105,721,186
1921	114,849,924
1922	139,626,876
1923*	263,883,520
Total	1,867,291,774

*Estimated.

If, therefore, California only once, as a result of most unusual circumstances, has been able to affect the markets of the world, this condition will probably cease to exist as soon as or even before all of the oil of 1923 has been run from storage, for the oil of 1924 will not even supply the state's current needs and its eastern obligations. It may not be many years before California will relinquish its more distant markets to competitors and some few more years thereafter, its refineries at tidewater will be served by tankers bringing oil from distant points. It does not necessarily follow in giving up more distant markets that these markets will be relinquished to competitive oil, but rather that fuel oil may yield to coal just as it did in 1920. More refined products will be made from the crude oil if the fuel oil must yield to coal.

There seems to be ample justification barring the most unexpected developments for the statement that the oil of 1924 will not supply California's current needs and its eastern obligations. Estimate of 1924 production and charts are submitted herewith in support of these conclusions. As to each of the older fields, the tabulation shown by Table 2 on page 20 is self explanatory and sums up the basis of the estimate for their 1924 production.

In the older fields, shut in production as of December 1, 1923, was variously estimated from 75,000 to 106,000 barrels per day. In estimating the 1924 production for these fields, it was assumed that half of this production would be opened up by April 1, and that the remaining half would be opened up by July 1. It is highly probable that most of the production will be opened up before July 1. Already some of the large operators in the Sunset-Midway field have begun opening up wells that were shut in. The rate at which this shut in production is made available will depend largely upon the individual needs of the companies having the shut in production and the conduct of their neighbors. In Northern California, storage was filled to the limit during 1922 and 1923. Before the production from the fields is sent to the refineries, it may be advisable to reduce some of the oil in storage. This will further delay opening up the new production.

Conditions relative each of the newer fields are discussed more fully in the following pages.

The Wheeler Ridge field is located in the southern end of the San Joaquin valley. Wells recently completed there have been brought in as pumpers and not as flowing wells. Developments in the field thus far indicate that it will be a small one rather than a

Estimated Production of California for the Year 1924

Los Angeles, Calif., Dec. 20, 1923.

NORTHERN FIELDS

	January	February	March	April	May	June	July	August	Sept.	October	November	Dec.
Kern River	15,000	15,000	15,000	16,500	16,500	16,500	19,000	19,000	19,000	19,000	18,800	18,800
McKittrick	6,000	6,000	6,000	5,900	5,900	5,900	5,800	5,800	5,800	5,700	5,700	5,700
Midway Sunset	75,000	75,000	78,000	89,000	89,000	89,000	100,000	99,700	99,400	99,100	98,800	98,500
Elk Hills	20,000	20,000	20,000	25,000	25,000	25,000	31,000	30,500	30,000	29,500	29,000	28,500
Lost Hills and Bellridge	4,100	4,100	4,100	6,600	6,600	6,600	9,100	8,900	8,700	8,500	8,300	8,100
Coalinga	13,000	13,000	13,000	24,000	24,000	24,000	35,000	34,700	34,400	34,100	33,800	35,500
Santa Maria, Summerland and Watsonville	8,900	8,900	8,900	10,900	10,900	10,900	12,900	12,800	12,700	12,600	12,500	12,400
Wheeler Ridge	400	400	500	500	600	600	600	700	700	700	800	800
Totals	142,400	142,400	145,500	178,400	178,500	178,500	213,400	212,100	210,700	209,200	207,700	206,300

SOUTHERN FIELDS

New Hall and Ventura	11,300	11,500	11,700	11,800	12,000	12,200	12,300	12,500	12,700	12,800	13,000	13,200
Salt Lake and Los Angeles	3,200	3,200	3,200	3,200	3,200	3,200	3,100	3,100	3,100	3,100	3,100	3,000
Montebello and Whittier	12,000	12,000	12,000	16,000	16,000	16,000	20,000	19,700	19,400	19,100	18,900	18,600
Coyote	3,000	3,000	3,000	10,500	10,500	10,500	18,000	17,900	17,800	17,700	17,600	17,500
Fullerton	10,800	10,800	10,800	12,000	12,000	12,000	13,300	13,100	13,000	12,800	12,700	12,500
Richfield	15,000	14,700	14,400	14,100	13,800	13,500	13,200	12,900	12,600	12,300	12,000	11,900
Huntington Beach	62,000	53,000	46,000	40,000	35,000	31,000	28,000	23,000	21,000	20,000	19,000	18,000
Signal Hill	216,000	180,000	150,000	120,000	95,000	78,000	70,000	62,000	53,000	44,000	35,000	25,000
Santa Fe Springs	147,000	81,000	60,000	50,000	46,000	42,000	38,000	34,000	31,000	27,000	23,000	20,000
Torrance-Redondo	52,700	46,000	44,200	46,900	46,300	40,200	35,700	31,100	29,100	27,000	25,000	23,000
Compton	1,300	2,600	3,900	5,200	5,200	6,500	8,000	11,000	11,200	12,500	13,800	15,000
Total	534,300	417,800	359,200	329,700	295,000	265,000	259,600	239,300	223,900	208,300	193,100	177,700
Total Northern and Southern fields	676,900	560,200	504,700	507,100	473,500	443,600	473,000	451,400	434,600	417,500	400,800	384,000

large one. Deeper sands of course may be found, other than the one from which production is coming at about 2500 feet. They may change the future of the field to some extent, but they will probably not make it a large field. As the operators in the field have large holdings, every effort will be made to extract all of the oil possible from the upper sands before attempting to develop deeper sands. Edge wells in the upper sands will naturally be drilled to hunt for a deeper sand. This general situation will both delay the hunt for a deeper sand and the time that its production is made available if it is found. The 1924 estimate in the table herewith for the Wheeler Ridge field is based on a conservative drilling program.

Recent developments in the Compton field indicate that it will for the most part be confined to large acreage. The small parcels of land where intensive drilling might result to the north and northwest of the larger tracts, will not be on the crest of the structure as of Santa Fe Springs and Signal Hill. At best, they will only be at the edge of the field. Only one well is producing at Compton, but others may be expected in within the next few months. The finding of an oil showing below 4800 feet in a well about half a mile north of the discovery well shows that a second zone may be expected in this field.

Dominguez Hill, on which the field is located, is on the same structural line of folding that runs through Signal Hill and Huntington Beach. It is a much more prominent topographic feature than the hills and mesas of the other two fields. For this reason the extent of the new field there should be about as great as either of the other fields.

Production of Compton field might possibly compare favorably with that of Huntington Beach or Signal Hill, its development should be along such reasonable lines that an excessive number of wells will not be drilled. Such wells as are drilled will be spaced far apart. They will have a longer life and the field will have a smaller peak production. In the estimated production of 1924 given below, the future production of this field during 1924 has been estimated assuming that no intensive drilling will be done in this field. The estimate is apt to be low rather than high.

During the latter part of December, some excitement was caused by the discovery of oil in O'Donnell well No. 6 in the field at Rideout Heights at the southwest end of the Puente Hills. This district lies midway between the Montebello and the Whittier fields in the Los Angeles basin. The first discovery of oil was made on September 8, 1919, at a depth of 3291 feet in C. W. Whitley well No. 1. A 300 to 500 barrel well secured 27 gravity oil. Recently, O'Donnel No. 6, a nearby well, has made 32 to 36 gravity oil from a depth of 4260 feet.

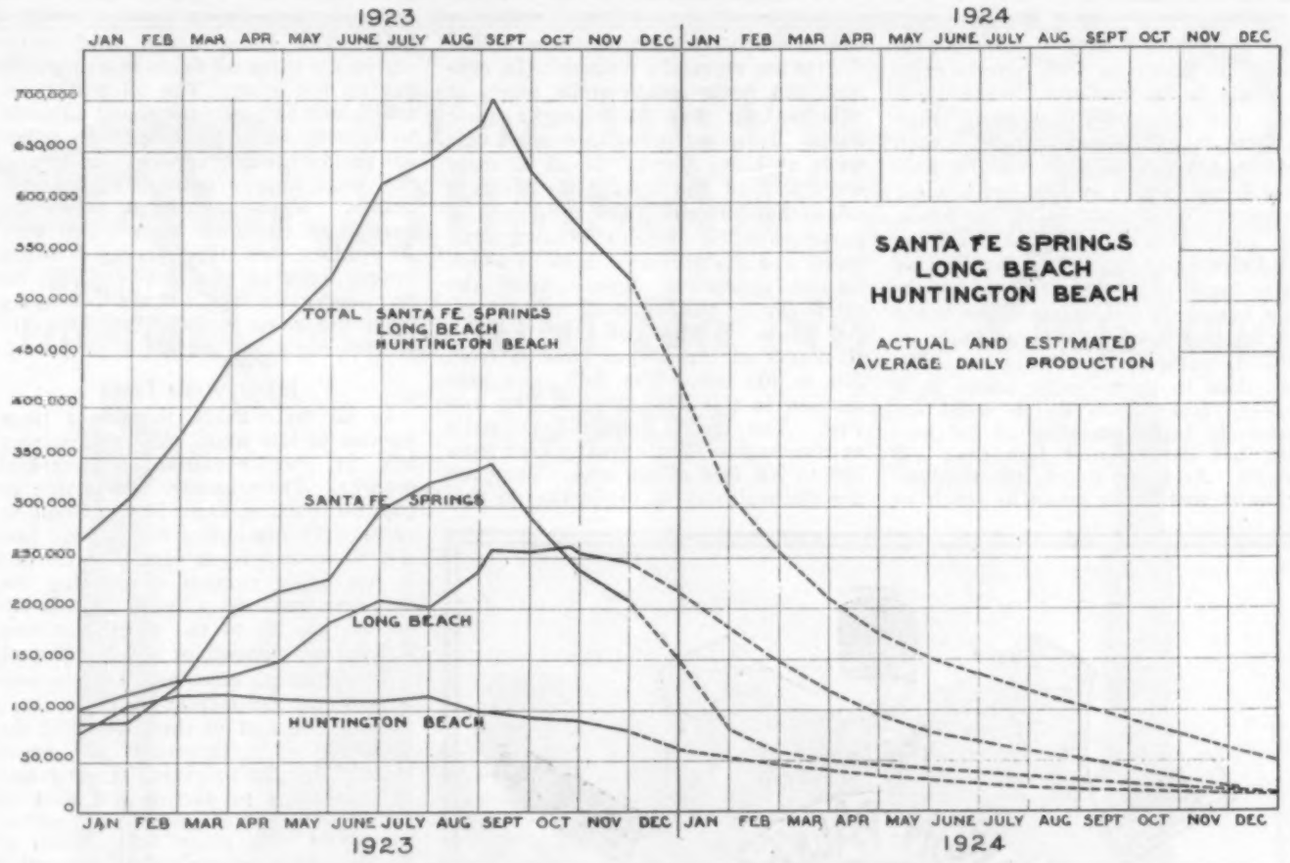
Rideout Heights

There is no conclusive evidence of an anticline at this point. The structure appears monoclinal with the beds standing so much on end that they are occasionally turned back and give a reverse dip. A combination of this reverse dip to the south and the north dip of the monocline has led some to assume that an anticline exists. Upon such an interpretation, the fold promises to be a sharp one. If a monocline is accepted as the structure, the width of the field does still not promise to be great because the monoclinal beds dip too steeply. Following the first discovery in 1919, 16 wells were drilled. Several were drilled deep enough to reach the upper oil, but it was not often found. The quantity of oil being produced from the lower sands is variously reported from 200 to 6000 barrels, dependent upon the last story in circulation. The well may possibly be good for 600 to 1500 barrels. It is only 16 feet into the oil sand. There

TABLE II

Production of and Data Relative to Older California Fields

Field—	No. of Producing Wells	Approx. Drainage Area per Well in Acres	REMARKS (Figures for wells shut in are only approximate)	July 1922 Daily Prod. Bbls.	Apr. 1923 Daily Prod. Bbls.	Sept. 1921 Daily Prod. Bbls.
Kern River	2166	2.4	Settled Production Few wells shut in.	19,500	20,193	19,003
McKittrick	277	2.0	Settled Production Few wells shutin.	6,000	6,221	6,070
Midway-Sunset	2078	5.0	464 wells shut in Some drilling possible. Slow decline.	73,200	70,704	74,645
Elk Hills	94	8.0	59 wells shut in. Additional drilling possible.	23,700	20,806	22,321
Lost Hills-Belridge	284	4.5	220 wells shut in Little drilling possible.	3,800	6,408	3,792
Coalinga	676	6.1	543 wells shut in	13,211	13,236	14,198
Santa Maria	327	10.5	Settled production No new drilling.	6,400	8,858	8,365
Summerland	135					
Watsonville	6					
Wheeler Ridge	1		Future uncertain. New drilling possible.	285	219	509
Newhall and Ventura Co.	538	Scattered	Slow, well controlled increase	10,632	9,940	10,097
Old Salt Lake	276	2.5	No new drilling.	2,500	3,369	3,179
L. A. City	322	Scattered	Many small producers scattered. Steady but gradual decline	12,000	15,118	12,118
Montebello-Whittier	300	Scattered	Some production shut in.			
Coyote	111	5.0	117 wells shut in	19,396	11,619	2,834
Fullerton	384		Future uncertain. Deep sand discovered.	11,200	11,225	10,780
Richfield	176	4.4	New deep sand contains only heavy oil.	16,500	18,020	15,099
Totals	8151			218,324	215,936	203,001



should be some drilling during the next year in this district. Progress promises to be difficult until the detailed structure is worked out by drilling. This may take the better part of the year 1924. Considering that the field will be narrow, there is no reason to expect a large accumulation of oil. Its occurrence in paying quantities however now seems certain.

The average daily production of the Torrance Redondo field during 1923 was as follows:

January	3,282
February	2,723
March	2,841
April	3,008
May	3,531
June	4,554
July	5,795
August	6,279
September	7,380
October	12,897
November	21,217
December	35,484

Spasmodic Drilling

When the field suddenly jumped in production from 20,000 to 32,000 barrels in a single week in November and then a few weeks later jumped again from 28,000 to 42,000 in a week, the question arose as to whether or not such erratic behavior might not presage another peak of production like that of one of the three large Southern California fields.

These sudden increases resulted from the finding of oil on the south limb of the anticline in an area where the property was owned in small parcels. The result was a most intensive drilling campaign. This has so far exhausted itself that the average daily production is now back to 35,000 barrels per day. The rate of decline of the wells in the Torrance field is even greater than that of large wells in the Santa Fe Springs field. The result is that wells now completed in the closely drilled area are finished as pumpers. Fully two-thirds of this area has been drilled up. The remaining one-third will probably be just as closely drilled despite the fact that from one-third to one-half of the wells will have a hard time in paying for their drilling.

Such marked rise in production has been due to the ease with which 3500 foot to 3800 foot wells can be completed at Torrance. Drilling is less difficult than in any other Southern California field. With the small parcels so nearly drilled up that production from 11 new wells was unable to maintain the weekly production during the last week of December, it is clear that the peak of production is near or has probably been reached at the present time. The wells drilled on the larger tracts even though the field be extended far to the southeast, will probably be completed at a slower rate, so that the production of the field will not be materially increased. The estimate for this field given in the table was made very high in order to take care of any excessive number of well completions during any month because of the rapid rate at which wells can be drilled, and the fact that from 10 to 15 new wells are being started each week.

To Seek Deep Sands

Compared with Santa Fe Springs, Signal Hill or Long Beach, and Huntington Beach, the highly productive part of the Torrance Redondo field is little better than the rim of the other fields. Few wells ever came in at more than 1500 to 2000 barrels. Most of them averaged 1000 barrels or less. Thus far, no attempt has been made to find a second sand or a second zone. So many wells are proving disappointments along the edge of the structure that the next two to three months should see some well defined attempt to discover deeper sands.

The structure in this field is a gently plunging flat anticline that bears southeasterly. Comparing the upper sands in this field with upper sands of other fields, it is to be noted that their production has been less important; thus the Bell zone in Santa Fe Springs showed a peak production of 82,000 barrels per day. At Torrance, a peak production of 52,000 barrels is highly improbable. In view of such a comparison, it is reasonable to feel that if a second sand is found in this field it will not compare with the deeper sands of the other big fields. Even if found within the next three months, it will nearly be mid-summer before it will have a marked influence on the output of the field. If it proves of value, the upper zone will quickly be abandoned in the closely drilled area. Even with the completion of a number of wells from the lower zone, if found, for a time at least there will not be any marked increase in total production because of the abandonment of the upper zone. It is estimated that if a second sand is found, it might increase the total production of the field during the second half of 1924 from 10,000 to 30,000 barrels per day above the figures given in the estimate for 1924.

Peak Passed

Santa Fe Springs, Long Beach and Huntington Beach have now definitely passed their peak of production and are declining. All three have shown certain common characteristics. Flowing wells often cease to flow when the gas pressure approaches 50 pounds on the flow string or tubing, particularly

so if any water is present. Wells producing as much as 1000 barrels daily suddenly stop flowing. When such wells are placed on the pump, they perform in a different manner in each field. At Santa Fe Springs, the fluid level drops to 3500 to 4000 feet in most instances. When placed on the beam, the wells seldom pump as much as 100 barrels per day. The invasion of water from the southeast to the northwest has reached the crest of the Santa Fe Springs dome. Where water is present, pumping is even more difficult than in those wells where it is absent. Huntington Beach wells occasionally begin pumping at 200 barrels, but generally at less than 150 barrels. At Long Beach, the shallower wells sometimes pump as much as 350 to 400 barrels per day where conditions are especially favorable. In general, the Long Beach wells pump at a better rate than those in the other fields. However, there are more idle wells at Long Beach. If all of them were pumped, the average for the field might be different. The difference in performance is due to existing fluid levels and gas pressures, both of which factors appear to depend upon the thickness of the oil zone penetrated. At Santa Fe Springs, the average thickness of the Meyer zone is from 350 to 400 feet. The Bell zone production in this field is now very limited. The lower Ashton zone wells at Huntington Beach usually have from 500 to 700 feet of oil zone. They too are the mainstay of production in that field. The Long Beach field really represents three oil fields superimposed one on the other. The oil horizon is nearly one-half mile thick, and adjacent wells very often produce from different parts of this zone. On the surface, the wells appear extremely close together. When segregated as to the portion of the zone from which they do produce, this close spacing does not appear quite as bad as one would infer. Even so, those wells producing from the same part of the zone are located too close together.

Many Wells Idle

In all three fields, there is a large number of idle wells. Many have been left in this condition for several months. Their owners are unable to pay for putting them in condition to pump. The incentive for outside parties to furnish fresh capital to do this is not great enough considering the risk involved. As a result of this situation, not all of the wells that stop flowing are pumped, or will be pumped.

Two methods have been used in estimating the production of these three fields. The first of these is called the B method. It represents the result secured by multiplying the estimated daily average production per well by the total estimated number of producing wells in a given field. Each of these units is determined by projecting the curves of the past into the future, giving due consideration to elements bearing on each of them.

The second or C method consists of first estimating the average rate of decline of production from wells producing at the first of each month for that month, and adding thereto the estimated new production in that month after deducting one-fourth of the new production which represents its decline during that month. The existing production on the first of April, 1923, and each succeeding month, has been segregated and its actual decline shown in order to determine the rate of decline of existing production as of the first of any future month. On the accompanying chart such curves are referred to as the D curves. The decline after the first month is more gradual than during the first month in each D curve. As the fields grow older, the decline of production in subsequent months after the first month is greater for the new D curves than for the old D curves.

The actual production as of December 1 was declined during the next four weeks at a rate suggested by the D curves of the preceding four months. The amount of the estimated new production was secured by projecting the total new production per week into the future. The four weekly readings for each month were added. From this total, one-fourth was deducted to represent the decline of the new production during December. The use of one-fourth appeared proper because when the method was reversed, new production for each month seemed to decline at this rate for September, October and November at Santa Fe Springs and Signal Hill.

As all three fields have now passed their peak of production those charac-

(Continued on page 86)

1924 Greetings

A babe was born on Monday night
Mid blowing trumpets and brilliant light,
Let's make this new year more worth while,
Meet friends and patrons with a smile,
When on past years we're looking back,
Be happy for "Red Packers Pack."

PACKERS SWAGED NIPPLES SWABS PLUGS

Built for service

ROBINSON PACKER COMPANY

Factory:
Coffeyville, Kansas
14th and Spruce Sts.
Phone: 66

Executive Office:
Tulsa, Oklahoma
210 N. Main St.
Phone: Osage 999

"The DEVIL HIMSELF" Could Do No Better

A few of the objects fished out by the

DEVIL'S PITCHFORK and DEVIL'S STEEL HAND

The above picture tells a story that is more convincing than would be any description of the DEVIL'S STEEL HAND and DEVIL'S PITCHFORK.

It shows at a glance the reason for the great popularity of these fishing tools among men who believe in saving time, labor and expense.

The objects shown above were fished out under the most difficult conditions, usually after other tools had failed.

DEVIL'S PITCHFORKS and DEVIL'S STEEL HANDS have been instrumental in saving thousands of dollars in fishing jobs and their reputation of being the fastest and most reliable fishing tools on the market is backed by a long record of successes.

Prices: 5 3/16", $265; 6", $285; 8", $310; 10", $350; 12", $430; 15", $490

SUDDEN SERVICE -:- ANY PLACE -:- ANY TIME

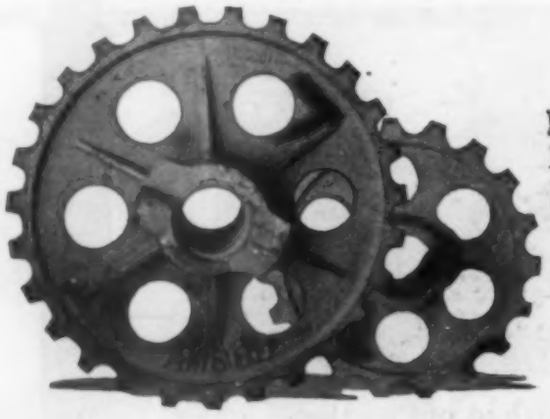
BROWN WELDING & MACHINE CO.

MAIN OFFICE AND FACTORY: BRECKENRIDGE, TEXAS

Rental Branch: 310 East 3rd St., Tulsa, Okla.

"BUCKSTOD"
MANGANESE STEEL PRODUCTS
Make *Super* Drilling Records

"Buckstod" sprockets and chains for rotary drilling equipment, made from Amsco Manganese Steel, are the answer to the vital need for products that will stand up under the abuse of deep drilling and intensive service of present day methods of operation.



More Strength
Less Weight
Longer Service

SPROCKETS AND CLUTCHES

"Buckstod" Amsco Manganese Steel Sprockets and Clutches have double the strength, with only about half the weight, and will give from five to ten times longer service than ordinary steel or chilled iron products.

The lighter weight reduces the torgue, permitting much easier starting, stopping and acceleration with proportionately less strain on the entire equipment. Greater strength eliminates breakage under unusual strains when a shut-down might mean loss of the hole.

CHAINS

"Buckstod" Amsco Manganese Steel Chains have approximately three times the bearing area of any other type of chain now in use, and **give a full manganese steel contact.**

The sidebars are cast integral with barrel and connected by heavy manganese pins, retained by special soft steel rivets which are easily removed, making the simplest and most rigid construction possible. No bushings, no separate sidebars, no cotter-pins or other small parts to show excessive wear or to break.

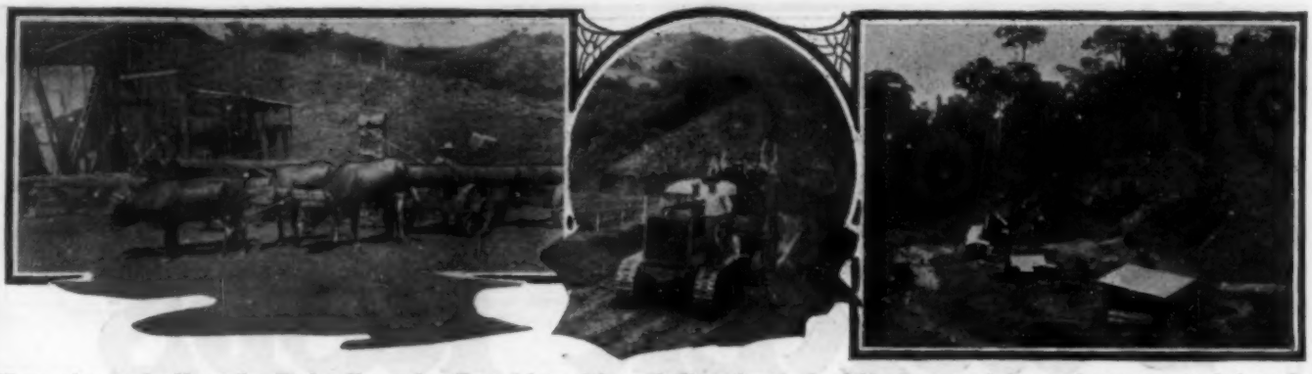
All "Buckstod" Steel Products are made from genuine Amsco Manganese Steel which is produced by the American Manganese Steel Co., the largest manufacturer in the world of this class of material.

BUCK & STODDARD

3354 East Slauson Avenue
Mailing Address: Box 720, Arcade Station
Los Angeles, California

New York **San Francisco**

AMSCO



Views taken in the Maracaibo district, Venezuela. From left to right: Hauling pipe to the field; a tractor being used to transport fuel to the field; one of the producing wells in the Maracaibo producing area

Foreign Districts Active With Wildcat Work

Many new sections entered during 1923 while old producing fields show drop in output

By A. R. McTee

FOREIGN production of oil during 1922 was not as great as has been reported at various times within the past 20 years. Many causes have combined to make this true. Russia and Galicia, two of the most important oil producing regions outside our own country, have not recovered from effects of the Great War. Developments in some of the other districts known to have good oil possibilities, have progressed slowly and production has not been secured in really paying quantities. Statistics show that 34.8 per cent of the world's supply of oil during 1922 came from foreign countries, however, in spite of the disadvantages. With improvements in the oil situation generally and the rapid reconstruction that is taking place in those countries devastated by the war, it is not unlikely that this percentage of oil coming from countries outside the United States, will increase within the next few years.

Roumania

With the exception of Russia, Roumania is the greatest oil producing country besides our own. The fields are located along the southeast edge of the Carpathian mountains. Production is obtained from around salt domes similar to those found in the Gulf Coast fields of Texas. In 1875 a total output of 100,000 barrels of oil was reported from hand-dug wells. Production has increased steadily from 1,628,535 barrels in 1900 to 9,843,000 barrels in 1922. This amount is 1.2 per cent of the total amount of oil produced. Roumanian fields saw their greatest activity during the period from 1912 to 1916. In those years, the total average yearly production was approximately 12,500,000 barrels. In 1916 the fields were captured by the German army and production was badly curtailed because of damage done to the fields by the Roumanian forces as they retreated. Within a period of about two years the fields were brought back and production is increasing, and may become normal within a year or two more.

Galicia

Galicia has not yet recovered from the disasters of the war. Economic conditions within that country are so badly depressed that few industries are progressing and least of all the oil industry. During the first two months of 1922 the total amount of oil exported was 56,972 metric tons. However toward the close of the year all developments were practically stopped and refineries had to curtail operations because their stocks of oil were exhausted. According to Commerce Reports of the United States, production was stationary during the entire year of 1922 and was but very little better during last year. Boryslaw-Tustanowice is the most important field in Galicia and up to 1913, 90,000,000 barrels of oil had been produced in that region. In 1913, 82.5 per cent of all the oil produced in Galicia came from this field. From two to three years are required to complete a well in Galicia, and it is quite probable that production in that country will not reach its past record for many years.

Russia

Russia is said to have the greatest oil field in the entire world. No other oil producing district has had such phenomenal records as the Baku field in the extreme southeast corner of Russia. Production in that area increased from 61,850,734 barrels in 1907, to 72,801,110 barrels during 1916. However, developments were halted by the war, and because of the general unstable industrial situation which still exists in Russia, her oil production has not been anything like normal since the Armstice was signed. During 1922, the amount of oil recovered from Russian fields totaled 32,966,000 barrels. No other district in the world has oil sands with the productivity of those in Baku. Statistics show that one plot in that district has yielded nearly 2,500,000 barrels of oil per acre and also that the entire operated area of 250 acres has produced an average of 1,500,000 barrels per acre One 260-acre tract in the main field has produced an average of over one-half million barrels per acre and is still capable of great exploitation.

Persia

Persian fields are perhaps the oldest known. Herodotus mentions Persian oil in his history and this record gives information regarding the oil districts, that dates back to 450 B. C. European interests became active in Persian oil development about 1900 when two wells were drilled. In 1901, D'Arcy, an Englishman, obtained a concession on 500,000 acres in southern and western Persia. More than $1,000,000 were spent in prospecting and drilling before oil was discovered in paying quantities. In 1904 the first hole was started near Schustar, which at a depth of 1100 feet struck oil and spouted 70 feet over the derrick, thus opening up the Persian resources. In 1909, the Anglo-Persian Oil Company was formed to work the concession given to D'Arcy. Later the Russo-Persian Petroleum Company obtained a concession on the northern part of Persia and began prospecting.

The most important developments have been in Maidan-i-Napthun and Schustar fields. In 1916 approximately 30 wells were drilled and every well was a gusher. In 1922, production of all Persian fields amounted to 21,909,000 barrels, 2.6 per cent of the production of the world. At the present time, further developments are delayed because of inadequate market facilities. United States figures compiled by the Geological Department of the Government, place Persia fourth in the list of oil producing countries

A concession covering the northern part of Persia, has recently been granted to the Sinclair Oil and Refining Company. This definitely means the entrance of American capital into the Persian fields, and possibly the creation of a market system. It is interesting to speculate on what this will mean to the oil industry in general and also as to what effect it will have on the economic situation of Persia.

Egypt

Petroleum development in Egypt has come about within the past 10 years. In 1914 a gusher was struck near Gemaah, the initial flow of which reached 316,500 barrels. The following year water began to appear in this well and its production declined to practically nothing.

In October, 1914, the Hurghada field

For Inherent Strength—No Sucker Rod Made Equals

JONES *ACME STEEL* SUCKER RODS

WE USE steel of special analysis, made to our own specifications—based on our score and half years' experience. We don't take the mill's word that the steel is right—in our own laboratories we test every length of rod for structure—for uniformity.

We use testing machines, especially made for this service, so that we know when JONES RODS go into the field they will render complete satisfaction.

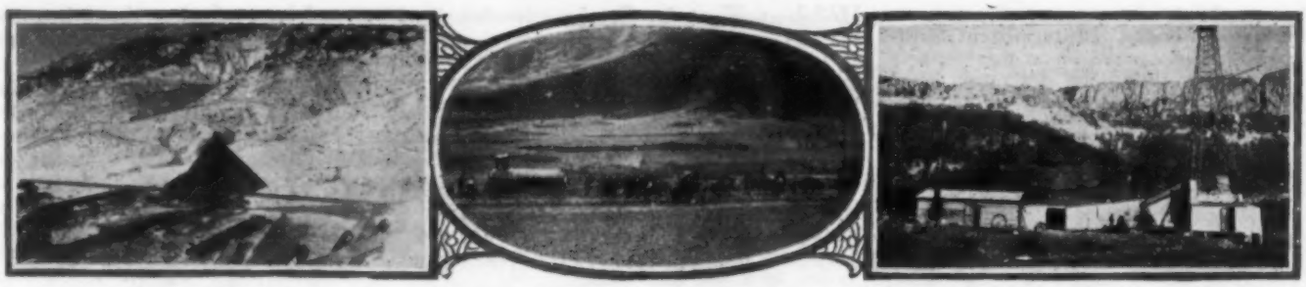
We invite those companies who employ technical engineers or maintain laboratories to make a comparative test of JONES RODS—we have no doubt of the result!

THE S. M. JONES COMPANY

ESTABLISHED 1893

Representatives Everywhere There's Oil

TOLEDO, OHIO



Views of the Gastian wildcat in Spain. This well is more than a mile deep. From left to right: Foundation for the derrick, built in February, 1923; hauling the boiler to the location of the well; the outfit as it looked about 30 days after the foundation of the derrick was built.
—Courtesy of the Oilwell Supply Company.

was brought in by a well with an estimated flow of 9,000 barrels daily. Since that time the Royal Dutch Shell Oil Company has completed approximately 35 producers. The greatest production was reported in 1918 when 2,079,000 barrels were produced. During 1922, this amount had declined to 1,188,000 barrels and indications are that figures for 1923 will show a further decrease.

Dutch East Indies

Production of oil on this group of Islands comes mainly from Java, Sumatra and Borneo. The fields are old, dating from 1883, and at the present time there are three principal producing areas, Soerabaja, Lidah, and Kutai. The peak of production seems to have been reached in 1921 when a total of 18,000,000 barrels of oil was recovered. During 1922 this amount fell to 16,720,000 barrels.

The low cost of production on Borneo because of the shallow depth of the wells, makes this area one of the most remunerative in the world.

Mexico

Since 1900, oil developments in Mexico have been going forward at a rapid rate. In 1901, the Mexican Petroleum Company was organized and drilled a well near Ebano. This well produced more than one-half million barrels of oil. In 1904 the great Tuxpam field came in. This was followed in 1910 by Panuco and Topila. These two fields established Mexico as one of the foremost oil producing fields in the world. Tepetate-Casiano, and Portrero-Alazan fields were discovered in 1910. In 1913, the Alamo field was brought in, and soon afterwards the great Amatlan district began to produce oil. In 1918 the area of southern Chinampa-Los Naranjos, between Amatlan and Tepetate, was found.

The rise of Mexican fields has been spectacular since 1910. Production figures show 2,600,000 barrels in that year. During 1922 the total amount produced was 182,278,000 barrels.

There was considerable activity in Mexican fields during 1923. During the early part of the year, the total output ranged around 400,000 barrels each week, but this amount dropped to approximatly 200,000 barrels toward the close of the year.

Many completions have been reported from the vicinity of Tampico, in Cacalilao and several extensions have been made to this field during the past year. At the present time much drilling is going on. Several wells were brought in during 1923, with initial production of more than 30,000 barrels. Pipe line facilities have been increased and extensive plans have been made for widespread drilling campaigns during this year. At the present time work is being rushed in order to make full use of the dry season. Just what effect the present political confusion will have on the oil industry is not known, so far, however, conditions have not become hazardous in the oil districts.

Venezuela

Production figures for Venezuela show that during 1922, that country produced 2,201,000 barrels of oil. The bulk of this amount came from the vicinity of Lake Maracaibo. At the present time about 11,000 barrels of oil are being shipped from Venezuela by the Caribbean Petroleum Company. One field, Mene Grande of the Caribbean Company is producing commercial oil. Other potential fields are shut in because present circumstances will not warrant exploitation.

Mene Grande is the largest field in Venezuela, and 32 wells have been drilled in this district. There is a refinery at San Lorenzo, belonging to the Caribbean Company. A casinghead gas plant with 4 compressors is in operation at Mene Grande. This field produces 10,000 barrels of oil daily.

Camp Los Barrosos of the Standard Oil Company of Venezuela has five wells with a small production

The British controlled camp of El Mene has 23 wells. Some of these wells have a production of 400 barrels daily.

The largest oil well ever brought in in Venezuela was the La Rosa well of the Venezuelan Oil Concession Company (Royal Dutch Shell) of about 100,000 barrels. A 40,000 barrel well was brought in by the same company several miles west of Lake Maracaibo.

About 100 wells have been drilled in Venezuela and much prospecting is in progress at this time.

It is estimated that approximately $100,000,000 are invested in Venezuela by the various oil companies. There is one refinery that can handle 1,400 barrels of crude per day and smaller amounts can be handled by other plants.

Canada

Canadian production has been on the decline for several years. Figures show that the amount of crude produced has declined from 750,901 barrels in 1898, to 179,000 barrels in 1922. The bulk of production comes from the province of Ontario where a number of small fields have been discovered. These fields have ranged in production from 68,483 barrels to 480 barrels. During 1923, the Imperial Oil Company, Ltd., drilled consistently in the vicinity of Calgary, but nothing of importance was found and reports about a month ago stated that drilling would continue throughout the coming year. Small showings were found in the Sweetgrass area, but developments are progressing slowly in that section.

Survey work is being carried on by British and Canadian interests prepara-

The Dingman well near Black Diamond, Altamont, Canada. This well is making considerable gas and some oil.

tory to the development of oil prospects in Newfoundland. Intermittent drilling has been carried on in this vicinity for a long time, and although good showings have been found, no commercial production has been developed.

Other Countries

Production figures for 1922 for other foreign countries is given below:

	Barrels.
India	7,700,000
Peru	5,314,000
Argentina	3,018,000
Trinidad	2,445,000
Japan and Taiwan	2,042,000
France (Alsace)	496,000
Colombia	323,000
Germany	319,000
Czecho-Slovakia	120,000
Italy	31,000
Algeria	9,000
England	1,000

Wildcat Test in Spain Now More Than Mile Deep

THE TEST well of the Cia. Petrolera Ibero-Americana (Interocean interests) near Gastiain, Province of Navarra, Spain, has now reached a depth in excess of one mile, and as a world record has been established for drilling under such difficult and unusual conditions in a remote region, far from any base of supplies, the facts relating to it are interesting.

The well site is in a mountainous region about 75 miles southeast of San Sebastian and 2300 feet above sea level. The climate in this part of "Sunny Spain" is very severe from the first of December until the last of May, being cold and windy with heavy snows and rains. Part of the time the road leading to the well was blocked by snowdrifts and was at other times impassable on account of the heavy rains, bogs and deep mud.

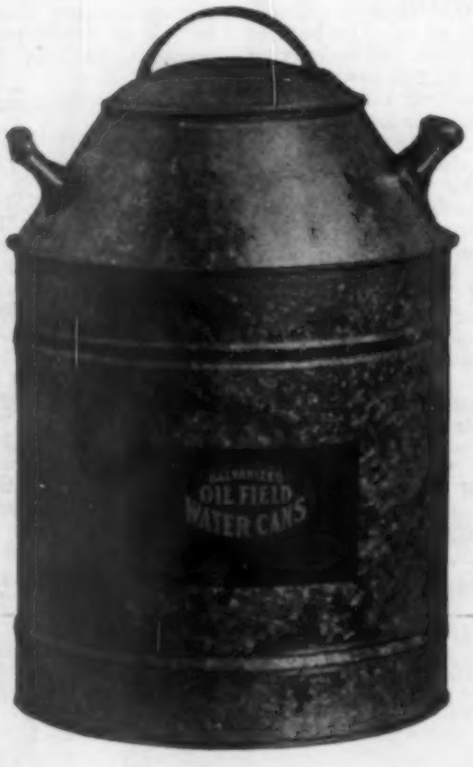
The drilling outfit was shipped from Pittsburgh, Pennsylvania, during October and November of 1922 and arrived at the port of Pasajes, Spain, on January 28, 1923 The well site is about 50 miles from the railhead at Pamplona, and much road building and repairing was necessary from this point, two kilometers at one point having been constructed through an almost bottomless bog during a period of continuous storms. Trucks, man power and oxteams with wagons were used to transport the equipment to the location.

After the first of this arrived, the building of the derrick was begun by the drilling crew on February 16th. On March 16th the well was spudded in and on November 19 a depth of 5285 feet had been reached. The actual working time to accomplish this (spudding, drilling, running and setting casing, underreaming, etc.) comprised only 116 days. All of the remaining time was spent in waiting for additional materials and in shutdowns on account of Sundays and numerous Spanish holidays.

When the venture was originally planned, a depth of only 3200 feet was contemplated and casing and lines were ordered sufficient only to attain that level. When that depth had been reached it was necessary to await the arrival of longer, 5000 feet drilling and sand lines, and at 4560 feet a long wait ensued pending the arrival of the 6 1-4 inch casing. This point had been reached in less than 90 days of actual drilling time.

After the arrival of the 6 1-4 inch casing, this was run and "carried" while drilling and underreaming continued to 4900 feet, at which point it was set. Drilling then continued to 5285 feet, when this work was suspended to cement off a cave, Nov. 20th. If more caving formations are not encountered, it is planned to drill on to around 6000 feet.

This work has been conducted in a region where neither well-logs nor definite geological data were available, which makes the achievement all the more remarkable—a good cable-tool hole more than a mile deep in only 116 working days, and in approximately 8 months **including delays and shutdowns.** The well was spudded in with 24 inch bits. The 20 inch drive pipe was set at 55 feet, the 15 1-2 inch casing at 475 feet, and the 12 1-2 inch (water string) at 1130 feet, the 10 inch at 1918 feet (carried and underreamed), the 8 1-4 inch at 2993 feet and the 6 1-4 inch at 4900 feet (also carried and underreamed); open-hole drilling proceeded to 5285 feet. The total length of casing used was 11,471 feet (weighing 416,158 pounds Wood was used for fuel (supplemented later by a small amount of gas from the well). The drillers were James McGranahan, of Greenville, Pennsylvania, and Clifford Ross of Huntington Beach, California, the lone tool-dresser being Frank Burgdorfer of Oil City, Pennsylvania, and the drilling superintendent, Thomas Bannon of Los Angeles, California. The boiler, engine (only a 30 H. P.) cordage, drilling tools, etc., were furnished by the Oil Well Supply Company, of Pittsburgh, Pennsylvania.



Your Supply Store Carries this Water Can in Stock. Ask for it.

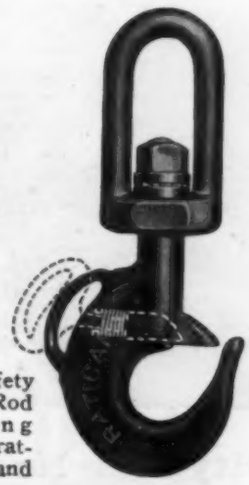
H. P. Gott Manufacturing Co.
Winfield, Kansas

Here Are 6 Sons of "Sure Grip"

Ratigan beam hanger, prevents injury to the beam.

They belong to the sturdy Ratigan family of oil field specialties and are thoroughbreds for helping you to get greater production — with safety to workmen.

Investigate the "Sure Grip" line for your profit—NOW. Catalog on request.



Ratigan Safety Sucker Rod and Tubing Hooks, operated by one hand

Ratigan Double Polish Rod Grip keeps polish rod straight and free of bends

Ratigan Polish Rod Clamp will hold any size polish rods and is reversible

Ratigan Polish Rod Grip does not have to be taken from the beam

J. P. Ratigan

1213 Santa Fe Ave.

Los Angeles, Calif.

Mid-Continent Field

Frick-Reid Supply Co., Exclusive Field Agents

Pacific Coast Field

All supply houses

Ratigan Bell Nipples give plunger free passage inside.

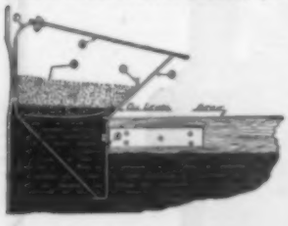
This Cannot Happen To Tanks

Photograph at the left shows a 55,000 barrel tank, owned by the Southern Pacific R. R. Co., after a fire had burned a third of its contents and melted down two rings of the wall before extinguishers took effect.

Photograph at the right shows the same tank re-conditioned and equipped with a Safvety Floating Tank Deck, never again to burn or lose its contents by evaporation.

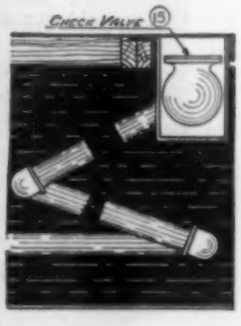
Gravity Seal—No Springs—Permanent

THE main structure of the Safvety Floating Deck is slightly smaller than the diameter of the tank. The rim of this extends above and below the deck. The space between deck and tank wall is connected with a flexible steel basket, (see illustration). Gravel in the bottom of the basket (3) by gravity keeps member No. 1 crowded out against the tank wall at all times. No. 1 is hook hinged to No. 6 and No. 3 is hook hinged to No. 1. No. 3 slides in and out on No. 5 which is higher than displacement. No. 2 sheds water onto the main structure. *This flexible basket is fully covered by patents and is the original floating deck invention.* The momentum for its automatic operation is furnished by nature's gravity pull. *It is not dependent on springs for operation and it is made of steel with a life as long as that of the tank.* It represents the difference between success and failure in a floating deck.



Automatic Folding Drain Pipe

THE illustration at the right shows the Automatic Drain Pipe through which rain or snow falling on the area of the Safvety Floating Deck is carried off. This pipe is swivel jointed and folds or extends with the raising and lowering of the deck. A check valve is located on the inside of the drain well and on the intake end of the drain pipe. This is a safety feature to prevent oil from flooding the deck in the event of a break in the drain pipe. The opposite end of the drain pipe has an automatic check valve which closes this end in the event of a break. *This patented drainage system is of prime importance to Floating Deck success.*

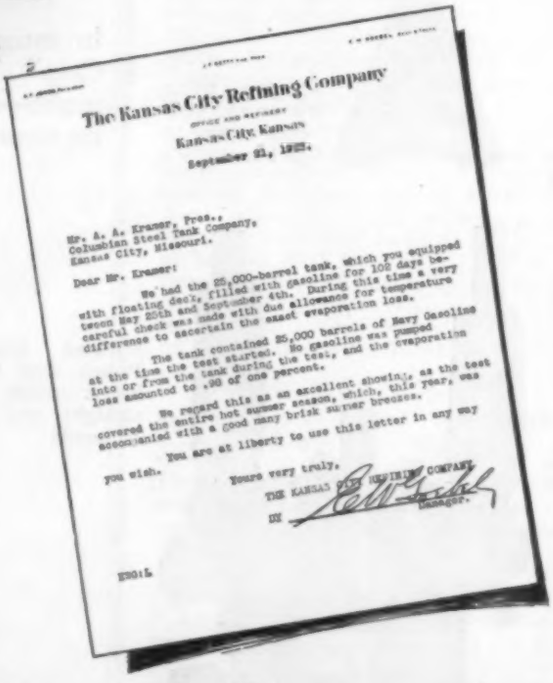


Automatic Folding Ladder

SINCE the Safvety Floating Deck raises and lowers with the level of the oil in the tank a ladder is necessary for easy access. The Automatic Folding Ladder shown at the left is standard equipment. This unique, *patented ladder* folds and unfolds its steps with the raising and lowering of the deck. The telescoping steps slide on two pipes anchored at the top and bottom of the tank and passing through sleeves in the deck.

Not An Experiment

Years have been spent in the development and perfecting of the Safvety Floating Tank Deck. It is not an experiment. Scores of installations have proved its success. Every detail has been worked out to a nicety.



The Kansas City Refining Company

Kansas City, Kansas

September 22, 1923.

Mr. A. A. Kramer, Pres.,
Columbian Steel Tank Company,
Kansas City, Missouri.

Dear Mr. Kramer:

We had the 25,000-barrel tank, which you equipped with floating deck, filled with gasoline for 102 days between May 20th and September 4th. During this time a very careful check was made with due allowance for temperature difference to ascertain the exact evaporation loss.

The tank contained 25,000 barrels of Navy Gasoline at the time the test started. No gasoline was pumped into or from the tank during the test, and the evaporation loss amounted to .98 of one percent.

We regard this as an excellent showing, as the test covered the entire hot summer season, which, this year, was accompanied with a good many brisk summer breezes.

You are at liberty to use this letter in any way you wish.

Yours very truly,

THE KANSAS CITY REFINING COMPANY

BY E. W. Goebel
Manager.

EWG:L

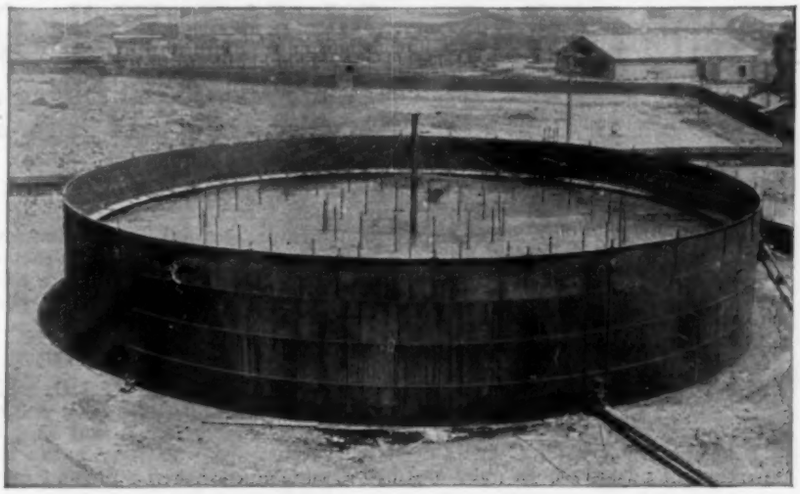
Prevents Evaporation

WITH a 25,000 barrel tank, equipped with a Safvety Floating Tank Deck, and filled with Navy Gasoline, the Kansas City Refining Company, Kansas City, Kansas, conducted an evaporation test over a period of 102 days of hot summer heat.

Above is reproduced in fac-simile a letter from Mr. E. W. Goebel, Manager, in which he describes the conditions of the test and the results. Just read what he says.

The evaporation loss was less than 1 per cent. The same size tanks equipped with canopy decks and in much more favorable weather showed an evaporation loss of 5 per cent and better. The difference between these two losses, reduced to gallons and figured 10 cents per gallon, amounts to nearly $5,000.00. Almost enough saved in a little over 3 months to pay for the floating deck. Repeated four times a year rather handsome dividends accrue—dividends that are escaping into the air from thousands of other tanks.

Equipped With The



Safety Floating Tank Deck

PREVENTS OIL TANK FIRES and EVAPORATION

IT floats on the surface of the oil. No air space is left between deck and oil in which vapor can form. Crude and its fractions are not combustible until vaporized. That is why a tank of oil under a Safety Floating Tank Deck cannot be ignited. That is why the Safety Floating Tank Deck prevents evaporation. The principle is as simple as A B C. The problem was to perfect a deck adaptable to all tanks.

The Safety Floating Tank Deck fits all tanks—those with packed bolted seams, those with riveted and calked seams, those with welded seams, those with bulging walls and those with walls out of plumb. Its outer rim is automatically flexible to clear all irregularities. It adjusts itself to the exact shape of the tank while at all times maintaining a snug seal against the tank wall.

It is a permanent structure of steel—not a liquid seal. It is a self-contained tank deck. One of its patented features provides ample drainage of rain and snow fall. No canopy deck is required. Since it floats on the oil it is not exposed to injurious gases. It has exactly as long a life as the tank.

An ounce of prevention is better than barrels of extinguisher. Canopy decks and fire extinguishers performing at their conceded best do not prevent damage, loss and waste when fire breaks loose. The same investment in Safety Floating Tank Decks will not only prevent tank fires but evaporation as well.

Write for Complete Catalog

—reproducing results of actual tests, photopraphs of installations, letters from users, detailed plans of construction and full description. Before re-decking any of your present tanks or specifying decks for new tanks, consider the Safety Floating Tank Deck. Write today.

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Boil Gasoline Without Ignition

HERE is reproduced an actual photograph of a tank, equipped with a *Safvety* Floating Deck, enveloped in a raging fire. It contains California crude on top of which was placed 30 gallons of gasoline. The debris around the tank was saturated with gasoline and set afire. Three hours elapsed from the time the torch was applied until the debris was consumed. Three hours of red hot fire—*not just a torch held above the deck.* The boiling of the oil in the tank could be heard for a distance of fifty yards. At no time did the contents of the tank ignite.

Not just this one, but many actual fire tests have demonstrated the merits of the *Safvety* Floating Deck as a preventor of fire and evaporation. During another test at Kansas City, eggs were hard boiled in the oil. A much more severe test was conducted by the Southern Pacific R. R. Co. under the direction of Mr. Harry Pollard, Chief of their Fire Prevention Department with results that persuaded them to install a *Safvety* Deck on the 55,000 barrel tank shown above.

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Say you saw it in The Oil Weekly

Getting Oil After Wells Quit Producing

Future may see oil mining a general practice—now used in foreign fields

By F. G. D. Muller

IT has been stated, that 1924 probably will mark the peak of production in this country; that production gradually will decline, whereas while consumption will increase; an oil famine the result unless the United States can manage to import oil in large quantities, discover new fields, increase the yield of present fields, or find economical methods of extracting oil from shales.

The Effects

Predictions regarding an expected shortage of oil have both good and bad effects.

The benefit results, because it forcibly brings to attention that oil is a wasting asset, i.e., for every barrel of oil used the available supply is decreased a like amount and although the origin of the oil is still in doubt, it is a pretty well established fact, that the formation of oil underground is such an exceedingly slow process that the present generation can in no way profit through its accumulation. The impending shortage of oil automatically suggests conservation. Waste through seepage, evaporation, burning of emulsions, improper utilization of oil as fuel and uncontrolled producing wells, must be eliminated. As a matter of protection at home, American oil companies should acquire oil bearing lands abroad, and they should be backed up in their efforts by the United States Government. It is gratifying to note that much has been accomplished in this direction already and that American companies have been and are now developing fields in Mexico and South America.

Evil Effect

The evil of predictions regarding a possible oil famine is that such statements may keep railroads, steamships and other industries from changing from coal to oil for fuel purposes or from installing oil engines. In the face of the present over production of oil, it is desired to find additional outlets where this commodity can be utilized to advantage.

It also may work as an incentive among producers to start an active drilling campaign which in turn will add still more trouble to the already confused conditions of the oil market. As stated before, there are beside conservation four different ways of taking care of the increasing demand for oil:

1. To discover new fields inside of the United States.
2. To develop foreign fields and to import the oil into this country.
3. To develop the shale oil industry.
4. To increase the yield of present fields.

As to paragraph one and two it may be said that from time to time new fields will be discovered and developed. Methods of prospecting and drilling both are being improved upon all the time and after a new pool is once located, it takes very little time to boost up production to record heights. California and the Powell field are striking examples.

As to paragraph three it may be said that present oil prices do not justify extensive development of the oil shale deposits but there will be a time when oil may be extracted from shale at a profit.

Further Recovery

Paragraph four, the increase of yield of the present fields, is a subject upon which the writer would like to dwell extensively. Various authorities estimate that with the present methods of production, by far the larger part of the oil is left under ground. Opinions vary as to the exact amount, which of course depends upon the porosity of the oil bearing formation. Estimates of oil left underground, after a field has gone "dry" vary all the way from 25 to 90 per cent.

The reason all oil can not be extracted from the sand, is on account of the physical properties of viscosity, capillarity and adhesion. Viscosity, the internal friction of a fluid; capillarity, which causes the oil to rise into the pores of the sand against the force of gravity, like kerosene in a lamp wick and adhesion which causes a film of oil to adhere to the sand grains, are the physical phenomena that retard the flow of oil through the sand. Oil, being absorbed in porous layers is extracted therefrom with great difficulties, and on account of the physical properties mentioned above, only a small percentage of the oil contained in the beds reaches the well.

Present Methods

Different means have been devised to increase the yield of a field by employing vacuum or gas pumps, compressed air heaters in the bottom of the wells, or by flooding the field with water. The latter process although successfully applied in the Bradford field, should be discouraged wherever possible. Not only are large quantities of oil liable to become trapped, but after a sand has been flooded with water, nothing else can be done to recover such oil as may have been trapped.

When considering a coming oil shortage, the decline and ultimate exhaustion of oil, the logical question is how to recover the 25 to 90 percent left underground by using present production methods.

Change Methods

On account of the viscosity, capilllarity and adhesion it will not be possible to drain a sand completely by employing the present methods of production and these will have to be changed in order to obtain all of the oil from a producing stratum. It will be necessary to go down to where the oil is, and drive channels or galleries through the sand to give the oil an opportunity to drain or ooze out of the formation into these galleries, where it is collected in sumps and pumped to the surface. The excavated sand may be brought above ground and last drop of oil extracted either by washing or by destructive distillation.

Being Used

This method of producting oil from hand dug shafts is by no means new. Hundreds of years before it was known that large quantities of oil could be produced by drilling wells, oil was raised from shallow hand dug shafts, which were sunk amid seepages and outcrops of oil bearing strata. The oil then was raised by buckets and a windlass. This method is still practiced in Bushtenari, Roumania-Binagadi, Russia, and Echigo, Japan. In the latter country some 20 percent of the production is obtained by hand dug wells which range in depth from 200 to 500 feet. Some pits in Roumania are 600 feet deep and yield as much as 63 barrels of oil per day. In Echigo, Japan, a shaft was dug by hand to a depth of 900 feet.

The first tests for oil in lower Alsace were made in 1735 by French miners. In Pechelbronn, France, before starting drilling, asphaltic sand had been mined since 1742, the oil becoming lighter with the increase in depth. The refining industry in Pechelbronn dates back 178 years making it one of the oldest in the world. In excavating a gallery in 1888 a sudden rush of inflammable gas occurred and shortly afterward this gallery was flooded with oil. After this incident machine drilling was resorted to and in 1888 underground working was discontinued as being too costly and dangerous.

It was not until 1916, on the advice of M. Paul De Chambrier noted French Mining Engineer, on account of the scarcity of oil, that another attempt was made to drive galleries through the Pechelbronn sands, which by this time were seemingly exhausted. This attempt yielded some gratifying results and it corroborates statements made by experts of the Bureau of Mines and the United States Geological Survey that the quantity of oil, remaining in the bed after exhaustion by drilling, is still very large. As a matter of fact it was found that by sinking shafts and driving galleries through the sand two and one-half times more oil could be mined, than had been obtained by wells drilled in the confines of the area under consideration. Or putting it this way; after the field had gone dry, only 29 per cent of the total amount of the oil contained in the sand had been recovered, leaving 71 per cent underground.

Type of Shaft

Before going into details regarding the construction of the drainage galleries, it may be well first to consider the construction of the shaft.

Where the oil sands are overlaid by hard non-water bearing strata the sinking of a shaft can be accomplished in the same manner as used in sinking a shaft for a coal or metal mine. However, in most cases in this country, the oil sands are overlain by sedimentary formations which are soft and water bear-

(Continued on page 35)

METHODS OF MINING OIL USED IN FOREIGN FIELDS

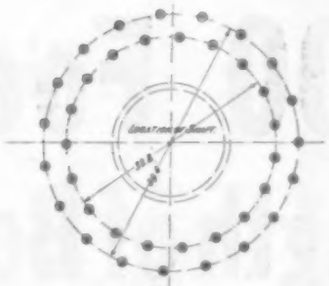

FIG. 1
PLAN OF COOLING SYSTEM
USING TWO ROWS OF WELLS

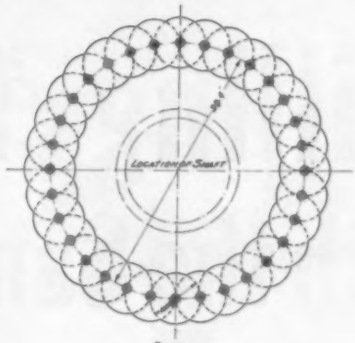

FIG. 2
PLAN OF COOLING SYSTEM
SURROUNDING WALL OF FRIABLE FORMATION
USING SINGLE ROW OF WELLS

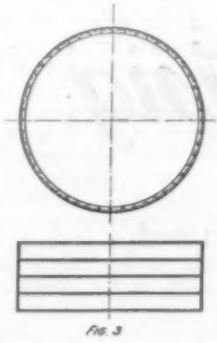

FIG. 3

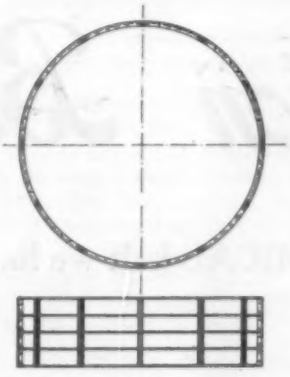

FIG. 4

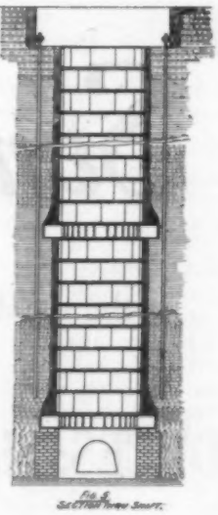

FIG. 5
SECTION THRU SHAFT.

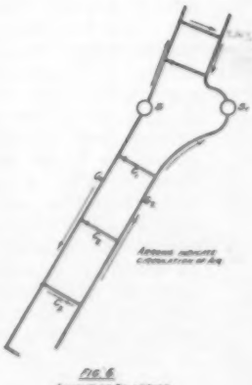

FIG. 6
LAYOUT OF GALLERIES

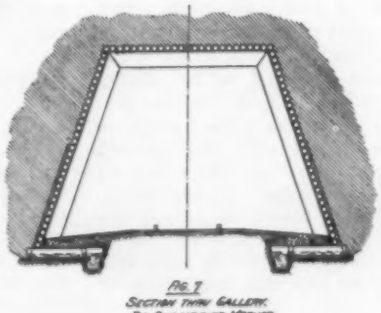

FIG. 7
SECTION THRU GALLERY.
DE CHAMBRIER METHOD.

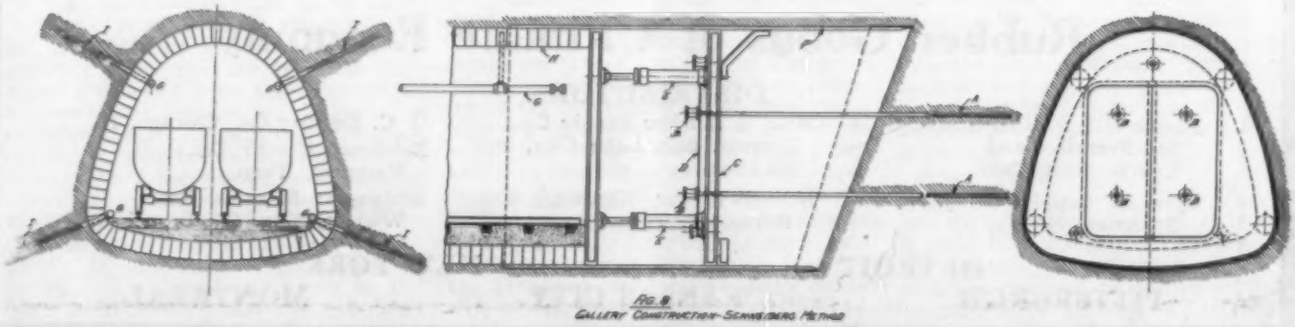

FIG. 8
GALLERY CONSTRUCTION-SCHNABERG METHOD

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Getting Oil After Wells Quit Producing

(Continued from page 38)

ing, and it is clear that, in this case, the ordinary method of shaft sinking cannot be employed.

Use Freezing

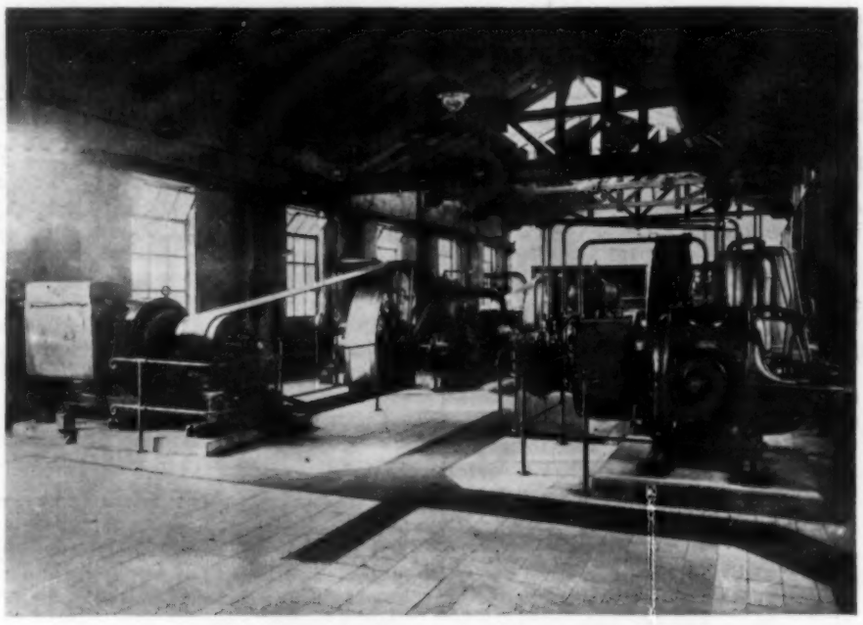
In order to build a shaft through this kind of a formation, it is necessary to solidify it by means of what is known as the freezing process. After the location of the shaft has been determined, a series of holes are drilled concentric with the shaft, as shown in Fig. 1 and Fig. 2. These holes are drilled to a point below the lowest soft or water bearing formation, at which point casing is set and a water shut off made. Inside of this casing comes a string of tubing which reaches almost to the bottom of the well. Brine, at a temperature of minus 17 degress F., is pumped down through the tubing and up between the tubing and the casing and is kept circulating through these wells, for about six months, leaving a frozen column of earth of about eight feet in diameter around each well.

On account of the spacing of the wells, these frozen columns overlap and a frozen ring-shaped wall is formed around the location for the shaft. This wall is as hard as brick and protected by this wall, the shaft can be dug, without danger for personal or material loss. It is of course of utmost importance that the preliminary wells be drilled as straight as possible, otherwise the wall of frozen earth will not be closed, permitting the shaft to be flooded with water.

After a proper place for the setting of the casing has been reached, which should be as close to the oil sand as possible, cast iron rings, with reinforcing ribs in horizontal and vertical directions, and with machined flanges at each end for bolting the rings together, are lowered into the shaft and put together from the bottom upwards. For a shaft of 15 feet in diameter the casing rings are usually made in one piece, Fig. 3, but for shafts larger than 15 feet diameter each ring consists of 12 segments bolted together, Fig. 4. These rings are knocked down for shipment, but assembled before they are lowered into the shaft, and the process of setting these rings is the same as for those in one piece. Taper reamed bolts are used to bolt the segments and the rings together. The height of the rings is usually 5 or 6 feet.

Cement Used

After the shaft has been lined with iron casing, cement is poured between the wall of the hole and the outside of the casing. After the cement is hardened, the circulation of brine in the auxiliary wells is stopped. No water will enter the shaft, as is the case with an ordinary water shut off in an oil well, where the casing is set and cemented in an impervious stratum. Fig. 5 shows the completed shaft. It will be noted from the figure, that where the shaft passes through hard formations, iron rings of considerable larger diameter than the shaft are inserted. These rings form shoulders that rest on the hard formations. In this manner the weight of casing is distributed and borne by the rock penetrated. Shafts of this kind have been carried down to a depth of 1310 feet with diameter of 20 feet.



Compressing station used in mining oil by means of shafts and galleries

There are a few other methods used in sinking a shaft through soft formations, but they cannot be described here on account of lack of space.

As mentioned before, it was not until 1916, upon recommendation of M. Paul De Chambrier that the gallery method for the recovery of oil was tried again.

Gallery Construction

Figure 6 shows a plan according to which galleries are laid out insuring the proper drainage and ventilations. "S" and "SI" are two shafts which are from 500 to 800 feet deep and 325 feet apart. "G" and "GI" are the main galleries which are about 160 feet apart and "C1," "C2" and "C3" connecting galleries spaced at 300 feet intervals. Fig. 7 shows the cross section of the gallery. It will be noted that the construction of the gallery is the same as for a coal or metal mine, except for the sloping sides. The floor is made of concrete and in the middle is a narrow gauge track over which the excavated oil sand is transported to the shaft in lorries. The galleries are 9 feet wide at the base and about 6 feet high. The roof and the sides of the galleries are made of old tubing at the face, and of round wood further in the gallery, as it is only at the face where danger of fire exists.

The lower end of the sloped walls are covered with sheet or roofing iron, bent over at the lower end, along which the oozing oil is guided into the drain pipes which are spaced 7 feet apart. The drain pipes in turn communicate with drainage canals provided under the floor. These canals terminate in sumps from where the oil is picked up by a pump and then pumped to storage on the surface of the ground.

The progress of gallery driving as practised at Pechelbronn is from two to three feet per day which includes the propping and clearing away work. The oil bearing sand is an oily brown mass and it is especially the lower portion of the oil bearing stratum from which the oil oozes out slowly, accompanied by small amounts of gas.

Explosive Danger

On account of the danger of explosion, pneumatic tools are used instead of pickaxes. Even the electric lights are provided with separate batteries in order to avoid electric wiring through the galleries. The sand that is removed from the galleries, still contains a certain amount of oil which is extracted on the surface by means of washing or other mechanical devices.

From the foregoing it may seem that petroleum mining is a very simple matter, but actual practice showed, that many difficulties had to be overcome. Mining of oil sand is very perilous, and the risks of fire and explosion are very great. It is hard to believe that in this country we can find miners willing to work under the same conditions as did the men, who dug those galleries at Pechelbronn. In order to make mining of petroleum a possibility in this country the methods of mining will have to be revised and improved. It will take time to find means to eliminate all dangers from fire, gas and water.

Improved Method

In connection with this an improved method of driving galleries through an oil bearing stratum had been devised and patented in this and foreign countries by Mr. Schneiders of Berlin. His invention looks like a real improvement over the method of gallery construction as described above and the writer believes that it is a step in the proper direction to make petroleum mining a success.

After the shaft has been completed a steel shield as shown in fig. 8 is lowered into the oil bearing formation. In order to make excavating of the galleries safe, it is essential that all gases and oil contained in the sand be carried off before the removal of the sand. To accomplish

this, horizontal rat holes "A" are drilled in the direction of the gallery, the drill stem passing through stuffing boxes "B" in the steel shield "C," oil and gas is carried off to the surface through gathering lines "G" and by means of pumps. In this manner, no oil or gas will ever enter the gallery which in this case is made of masonry instead of tubing or wood.

When the sand in the vicinity of the shield has been drained of oil and gas through the rat holes, the steel doors "D" are opened and the sand excavated. After having excavated the sand over a length of about two feet, the hydraulic jacks "E" are applied and the steel shell "F" is pressed forward through the excavated part of the formation. After the shell, which carries the steel shield and the jacks, has been pushed into the formation, with doors "D" left open, the pressure on the jacks is released and the masonry lining "H" of the gallery can be extended over a distance of two feet. This process is repeated until the gas becomes too strong and oil keeps on coming in greater quantities. The steel doors then are closed and the drilling of rat holes repeated.

At certain intervals holes are drilled at right angles to the center line of the gallery and drainage pipes "I" are inserted into the sand through the brick lining of the gallery. These drainage pipes carry the oil, which oozes out of the formation, into the gathering lines. The gallery is made large enough so that two narrow gauge tracks can be laid on the bottom, over which the excavated sand can be removed in lorries.

The method of gallery-driving as described above is very similar to the building of tunnels under water.

Oil Recovery

In connection with the gallery method of oil recovery it is interesting to know that at Pechelbronn the total production of oil per lineal foot of gallery was 21 barrels by oozing and 4 barrels by the final treatment of the sand. This production was obtained after the formation had ceased to yield oil through drilled wells.

It has been estimated by a joint committee, composed of members of the American Association of Petroleum Geologists and the U. S. Geological Survey that 9,000,000,000 barrels of oil are left underground in the United States that can be produced by methods now in use. It also is known that up to date the country has produced 7,000,000,000 barrels of oil. This makes a total of 16,000,000,000 barrels of oil recoverable with present production methods. If this amount represents only 50 percent of the total amount of oil in the ground then this means that another 16,000,000,000 barrels of oil can be extracted from the earth by mining. From these calculations it may be seen that there is still an enormous amount of oil in this country waiting to be taken from the ground. Only the means will have to be devised to make the extraction safe and profitable. There are no doubt, many competent engineers in this country, who will devise such means and produce the oil when it is needed, and there will be plenty of oil to supply the demand for many years to come.

Where a difficult undertaking such as the construction of a vehicular tunnel under the Hudson River in New York City can be successfully accomplished, no doubt means will be found to drive similar tunnels through an oil sand. Engineers abroad have pointed the way and have actually shown that "oil mining" is possible.

Up To Industry

It is up to the industry to make oil mining safe and fool proof and apply it to exhausted fields in this country. There are many shallow places where it can be tried out first, with reasonable assurance of success, and gradually deeper beds may be exploited as the knowledge of mining increases.

The gloomy predictions made by the U. S. Geological Survey and the Association of American Geologists should serve as a warning that we cannot keep pace with the ever increasing demand for oil, unless we recover all of the oil contained in the oil bearing formations.

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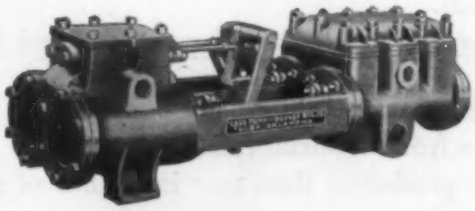

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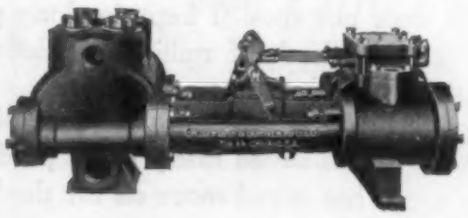

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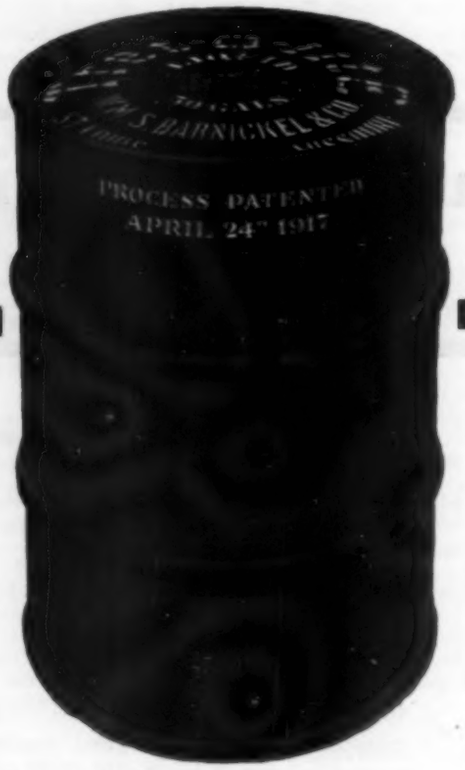

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It has saved many valuable oil wells from total loss.

It has saved many small producers from financial ruin.

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Improved Methods to Help in California

With production below consumption more scientific development will be made

By R. E. Collom

THE OUTLOOK for petroleum in California, in 1924, must necessarily be studied in terms of the outstanding phases of 1923.

The year 1924 will, of course, be one of subsidence of the flood of high grade crudes of the three big fields of the Los Angeles Basin. Oil wells shut down in the older fields will again be put on the pump, but, because of the lack of elasticity in the oil business as a whole, probably too late to maintain a balance between production and market demands, particularly for fuel oil. Operators whose present production is confined to the town-lot fields of the south, will be activly seeking additional oil land to protect their investments. Those producer-marketers who have recently built new refineries and extensive storage facilities in the south, possibly in some cases over zealous from the stimulus of the basin flood, will be actively in the market for crude to run through their refineries. Los Angeles Basin crudes, of the high gasoline variety will move into a more definite and favored position in price schedules. Increased drilling activity should be expected in the San Joaquin Valley.

During 1923 California oil fields produced an estimated 264,000,000 barrels of crude oil. Of this amount the three gusher fields of the Los Angeles Basin produced 183,000,000 barrels of high grade crudes. The combined production of the fields reached its peak in September with a daily average of 645,308 barrels for the month. The remaining 81,000,000 barrels was produced by all other fields of the state. An estimated potential production of 32,000,000 barrels in the older fields was shut-in. About 85% of the production shut-in was of the refinable crude grade, that is, above 20° Baume. The heavy-oil fields such as Kern River, McKittrick, parts of Midway-Sunset and Coalinga West Side were operated almost to capacity.

The record breaking production, in 1923, created markets for California petroleum in places which heretofore have been considered beyond the borders of California's marketing province. It is yet too early to say how secure or permanent all of these markets are or to state exactly what the future relationships between production and consumption will be. Consumption has been abnormally expanded and it will be difficult to estimate for some time what is the new normal consumption, of crude oils, fuel oils and gasoline. Seventy percent of the state's output was of a grade for which there is no similar marketing record in the history of California petroleum and, further, that output was 45,000,000 barrels larger than the total production of the state in its best previous year.

The three outstanding factors in transportation and marketing of the 1923 output were the deliveries of high grade crudes of the Los Angeles Basin to Atlantic and Gulf Coast Ports, increased foreign shipments and domestic consumption of gasoline, and restored and increased market for fuel oil.

Shipments through the Panama Canal totalled 58,000,000 barrels of oil, including an estimated 3,500,000 barrels in transit. An estimated 3,333,000 barrels of gasoline (1,276,000,000 gallons) was loaded for foreign export. The fuel market consumed an estimated 127,500,000 barrels of crude and residuum.

The California output was distributed approximately as follows:

SHIPMENTS	Barrels
Panama Canal	58,000,000
Residuum	78,500,000
Heavy crude	49,000,000
Gasoline	28,500,000
Kerosene	4,800,000
Lubricants	2,000,000
Tops	5,800,000
Other finished products	1,500,000
Losses	5,000,000
STORED	
Refinable crude stored	20,000,000
Heavy crude stored	2,000,000
Gasoline stored	2,000,000
Tops stored	10,000,000
Total	264,000,000

The fuel oil market handled an estimated 350,000 barrels daily of heavy

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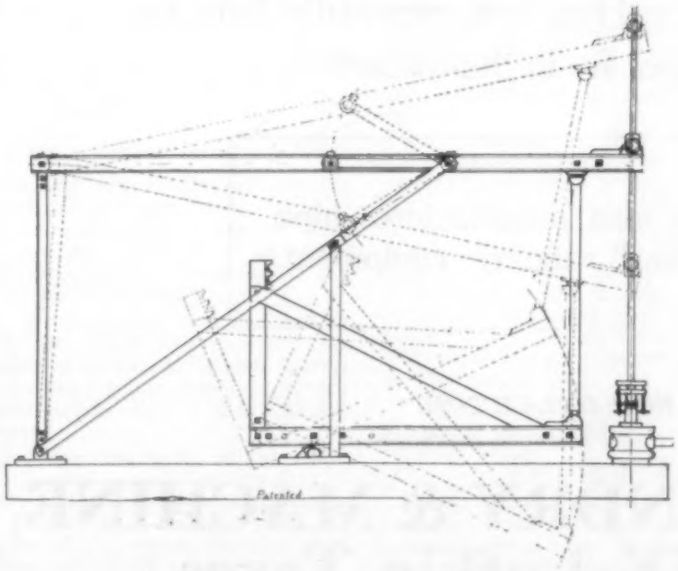

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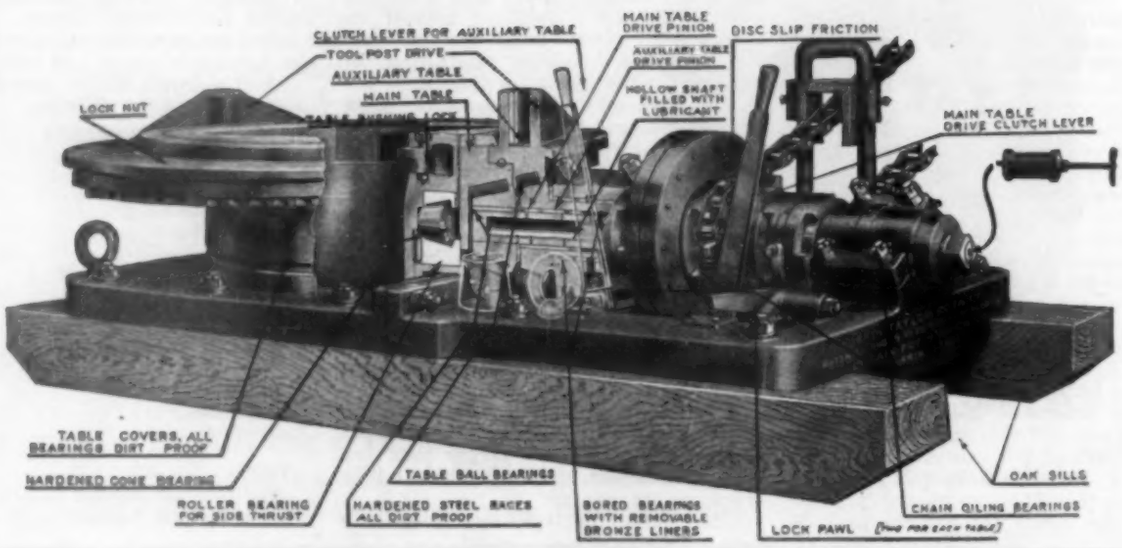

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crudes and residuum. It is estimated that the refined products market will require 100,000 barrels daily, in addition during 1924. About a third of the 1924 requirements for refined products, gasoline, kerosene, etc., could be filled from present storage and about a fourth of the fuel requirements could be filled form present storage.

It is estimated that the three big fields of the Los Angeles Basin; Long Beach, Santa Fe Springs and Huntington Beach will average 250,000 barrels daily for 1924. Of this amount about 120,000 barrels daily, will be required to fill contracts for Atlantic seaboard deliveries.

This leaves an average of 130,000 barrels daily, either for refining in California or shipment through the canal.

Assuming that an average of 130,000 barrels daily of the Los Angeles Basin crude is refined in 1924, that will produce about 60,000 barrels daily as residuum or fuel. The remaining 290,000 barrels daily, to satisfy the required 350,000 daily for the fuel market must be met by residuum from the lower grade of refinable crudes, additional fuel crudes and from storage.

The entire state's production in January, 1921, was 325,000 barrels daily which included 60,000 barrels of flush production from Elk Hills. In January 1922, the production of the state, minus the three gusher fields, was 290,000 barrels. Experience has shown that, in the absence of an active drilling campaign, production of the older fields declines at the rate of about 10% per year. It is probable therefore that if all the older producing wells of the state were put back on the map at the beginning of 1924 the average daily production would not exceed 250,000 barrels.

Estimated available production, on a daily average of 1924 would be about as follows:

	Average daily barrels 1924
Long Beach, Huntington Beach and Santa Fe Springs (exclusive of Panama Canal)	130,000
San Joaquin Valley and Coastal Fields	250,000
New production, such as Torrance, Compton, etc., estimated	70,000
Total	450,000

In total, the above balances with the estimated consumption for 1924, exclusive of Panama Canal, based on 1923 experience, but several factors will probably prevent such a balance for the year as a whole, namely:

1. It is probable that shipments through the canal will continue for some time in excess of 120,000 barrels daily—making for less than the average of 130,000 barrels allowed in the tabulation above.

2. All producing wells of the older fields will not be opened at the first of the year or for several months thereafter. The average, for the year, for old fields will therefore be less than the estimated 250,000 barrels.

This means that in order to keep a balance between production and the fuel market during 1924 the shut-in production of the three big fields of the south, plus, of course whatever production is made available by Torrance, Compton and any new discoveries which might contribute a considerable flush production or else oil must be drawn from storage.

At the beginning of the year there are at least thirty active wildcat areas in the Los Angeles Basin. It is obvious that no prophecy is in order as to which of these will turn out to be producers. However, it is possible that one or more new fields may be discovered. It will take a new field almost a year to get underway, however, as a material influence in production. Anaheim, Bellflower, Bandini, Fullerton, and El Segundo are attracting considerable notice. Despite the production of the Union Oil Company's Callender well at Compton, the general area of Dominguez Hill is still in the wildcat stage.

A new big field in the Los Angeles Basin of similar gasoline content to those developed in the last two years will have a much different effect on the California industry—serving to continue present conditions, than will a new field in the San Joaquin, even of high grade crude. The present refinable crudes of the San Joaquin average 1-3 the gasoline content of the new fields of the south.

California needs increased production of the San Joaquin variety to meet the demands for fuel oil and ease off on the increasing accumulation of gasoline stocks.

In the San Joaquin Valley the most active wildcat areas are Comanche Point and the Jacalitos dome. It is rumored that a wildcat well is shortly to be started in the Kettleman Hills.

In the developed fields the extension of the thirty-five anticline of Maricopa flat gives promise of considerable new production. In the Buena Vista Valley new production has been developed out in the flat north of the United and Honolulu anticlines. Several notices have recently been filed for new wells in the Elk Hills where Pan-American Petroleum Company is expected to carry on an active drilling and development campaign. Developments of the last year in the Hovey Hills have opened some valuable low gravity territory along the western rim of the Midway-Sunset field from Maricopa to twenty-five hill.

Improvements in deep drilling technique during the past two years will be converted into action during the coming year in a number of inadequately tested areas of the San Joaquin as well as in testing for deeper productive horizons in present proved fields.

During 1924 the oil industry of California will find relief from the past two years of town-lot hysteria and spread into wider spaces of more orderly but healthy competition.

Jackson Again Heads Petroleum Exposition

Tulsa, Okla., Jan. 11—At a recent meeting of the Directors of the International Petroleum Exposition and Congress, L. B. Jackson was again elected to fill the office of President with E. F. McIntyre as general manager.

Other officers elected include the following: J. M. Hayner, vice-president, W. A. Vandever, vice president, J. J. McGraw, treasurer and Pat Haynes, assistant treasurer.

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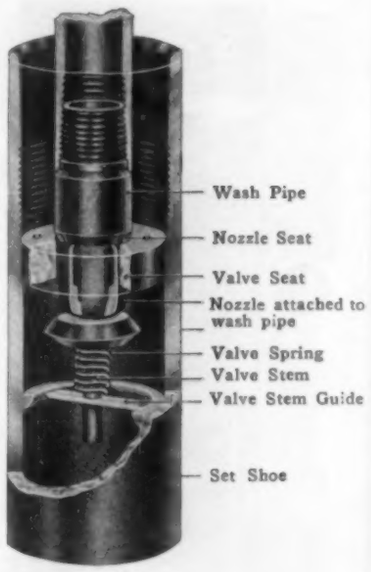

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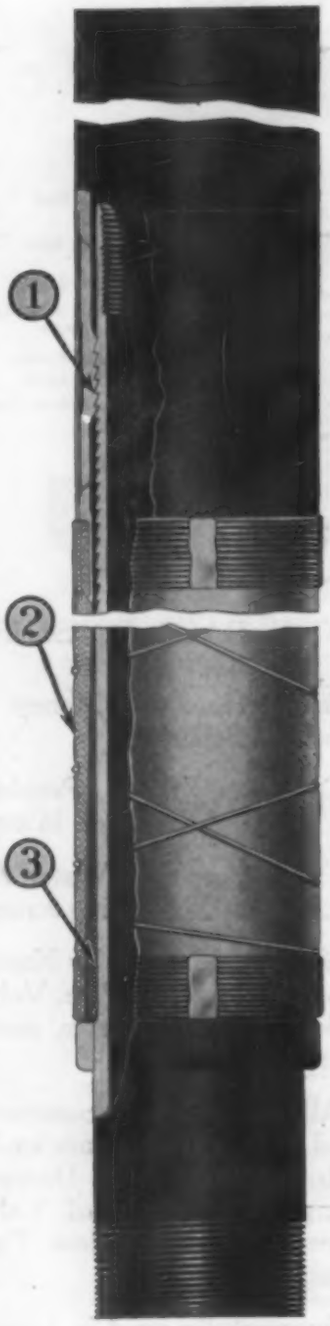

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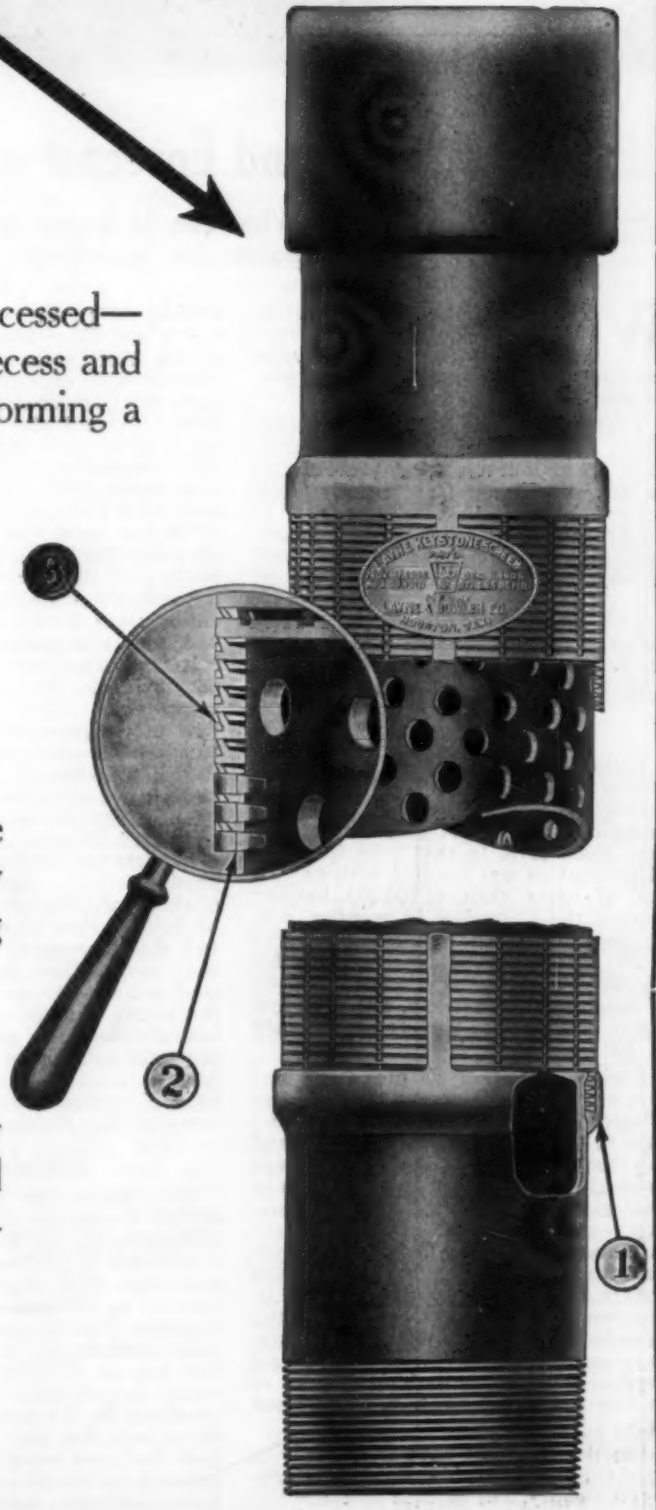


Main pool of the Eldorado field in Kansas where

Review and Forecast of United States Fields

What can be expected this year? Survey points out possibilities of various sections

WHERE will the center of drilling activity be in 1924? What districts are likely to have bearing upon the crude market? Will production go up or down?

These are some of the questions which are being asked by the industry as it starts out on what promises to be one of the most prosperous years yet experienced. A detailed survey of the prospective districts show that production will no doubt decline with present indications pointing toward no one section where any excess output can be expected. Following is a careful survey of the country giving a brief review of the past year's development with forecasts as to the future.

Kansas

Following a trend of decreasing production which started in 1919, the total recovery of crude oil in Kansas fell lower during the past year than at any time since 1918. In that year the peak of production was reached with an output of more than 45,500,000 barrels. During the following 12 months, production figures showed a decrease of more than 2,000,000 barrels, and this decrease has been continuous in spite of much drilling activtiy, until the low figure of 29,406,925 barrels was reached in 1923.

Perhaps no other oil producing section of the Mid-Continent area was less affected by over-production within its own fields during the past summer and fall than Kansas. All the fields showed gradual declines and new operations in wildcat territory failed to open any pools of significance, except in three instances and these have not as yet shown up as exceptional. The Valerius well in Russell County, the Waite Phillips well in Cowley County and the Wetchensky well in Harvey County, have each apparently brought in a new producing field, but nothing definite as to size or extent has been determined yet.

Slight extensions have been made in some of the old fields, notably Greenwood County, but in each instance the extension well has been small, not large enough to increase the decreasing production of the state as a whole.

Drilling has not been as pronounced in Kansas as in the other fields of the country during the year just past. During the summer months, when California and Corsicana-Powell were producing their greatest amounts of oil, Kansas was experiencing one of the most inactive periods in her whole history. Toward the early fall a light flurry of prospecting was evident, but this resulted in nothing.

Greenwood County, Elbing and Peabody and Eldorado, the three districts producing more than 10,000 barrels of oil have maintained a rather consistent production throughout the year, showing only small decreases. In fact, the entire state does not show decreases in alarming amounts, but the trend has been extending over five years and the proportionate decrease has been less every year. This in itself indicates that unless new pools are discovered, Kansas will not maintain her place in the Mid-Continent fields throughout many more years. She will have to sink to a position of minor importance when compared with Texas or Oklahoma.

Reports are current that much prospecting is to be done in the early part of this year. However, it is hardly safe to believe that production in Kansas will show increases. All the old fields have passed their most productive period and are now only giving up oil on the pump, and there are few signs to indicate that new pools of great consequence will be discovered. Practically all sections of the state known to have oil possibilities have been tested more or less thoroughly.

Oklahoma

With production going beyond 155,000,000 barrels during the year of 1923, Oklahoma has set a record which may be difficult to maintain. Statistics show that since 1919, the amount of oil recovered in Oklahoma, has been steadily increasing. There was a jump from 113,000,000 barrels in 1921, to 147,000,000 barrels in 1922, the greatest increase in one year that has ever been recorded in the history of oil within the state. But this year, the increase over last year is only about one-fourth as great as that of last year over 1921—a fact which is important in the face of the greatest production that the state has ever known.

Figures for the year just ended indicate that the natural decline in old fields is continuing at a fairly rapid rate. Production in the three largest fields, Burbank, Tonkawa, and Creek County, is still well above the million-barrel mark and will probably be kept at this level by intensive drilling campaigns. However, if the present rate of decline in these fields continues through 1924, the loss of production cannot be made up by the other fields in the state.

Proration has undoubtedly had its effect on production figures, and the restrictions on drilling that have been in force in Burbank and Tonkawa have kept production in those two fields from going higher. Since the early part of 1924 the average rate of decline in these fields has been approximately 2,000 barrels each week, and in both fields, production at the present time is just about one-half as much as it was eight months ago.

Creek County with Bristow field has maintained the most consistent and steady production of the fields producing more than 1,000,000 barrels of oil. Average monthly production of Creek County for 1924 reaches slightly more than 1,500,000 barrels. While there is nothing sensational about this district, it is one of the most important in the whole state because of the manner in which it holds up. In the long run, it is such fields with steady production that hold the oil industry together.

Wewoka has contributed something over 1,000,000 barrels of oil since the pool was discovered in March of the past year; and although not starting in its production, indications are that this field will be a factor of importance in the Oklahoma situation during the coming year. The total number of wells drilled in 1923 was 22, and all of these wells were commercial producers. Wells in the Wewoka district are not phenomenal in their initial flow, but so far they have held up well and have given indications that the pool is to have long life. At this time the total output from the 22 wells is little more han 10,000 barrels, but it is known that potential production of the field is considerably more than that amount. Various conditions have made it necessary to pinch in practically every producer as it was brought in, and few of the wells have ever been opened up to capacity flow. From what the field has done since the discovery well was brought in, it is reasonably

development was both intensive and aggressive. —Photo by Griggs, Bartlesville, Okla.

safe to predict that it will never become what Burbank or Tonkawa have been.

The southern districts held up well during the early part of 1923, but have shown big slumps since the middle of the year. Hewitt ranged above the million-barrels mark for a few months, but since June, production there has fallen steadily.

Wildcatting brought a few districts into prominence during 1923, but with the exception of Seminole County, these districts have not been of much importance. The Sayre pool in Beckham County gives promise of oil in paying quantities, but so far, development in that section has not been out of the ordinary. A few of the big companies hold acreage in the vicinity of the discovery well, but activities are proceeding very slowly. Drilling statistics show that nine out of ten wells drilled in the western districts of the state during the past year have resulted in dry holes.

The situation at the present time is of such a character that one must conclude that an unusually successful drilling campaign will be necessary during 1924 in order to bring production back to the figures that have been set in the past year. It is extraordinary to have two such fields as Burbank and Tonkawa producing oil at the same time, and activities in the past have proved that such fields are exceptions rather than the rule.

Corsicana-Powell

The big flush production obtained during the eleven months that followed the discovery of the Corsicana-Powell field in Navarro county section of East Central Texas in January, 1923, proved to be one of the most spectacular events in the history of the oil industry in the United States, and materially fortified Texas' position as an oil producing state. The development of this field over-shadowed all other operations and discoveries made in Texas during the year 1923, although a number of important producing areas were uncovered. It was also a contributing factor in bringing on a spell of overproduction of crude ond comparatively low prices in the Mid-Continent fields.

A concern known as the Corsicana Deep Well Company is responsible for the discovery of the Corsicana-Powell field after experiencing more than two years of hardships, during which time its first two tests were junked and abandoned before reaching the producing horizon. The discovery well is located on the J. O. Burke farm, and started flowing by heads at the rate of about 350 barrels daily January 7, 1923, from the Woodbine sand at 2950 to 2960 feet. The drilling campaign that followed the completion of this well later developed that the discovery well was situated in the extreme northeast end of the woodbine structure, and that the trend of production extended in a straight line to the southwest. Completion of the Hughes Development Company's McKie 1, located two and one-half miles southwest of the discovery well, on May 9, flowing about 6,000 barrels daily, furnished the first big production for the field, and literally started the ball to rolling from a standpoint of lease buying and drilling campaigns. This well caught fire on May 10 and burned to death 13 field workmen and members of the drilling crew.

The large initial production and extension given the Corsicana-Powell field by the McKie well was soon followed by a series of extensions further southwest, and by the middle of July the development of the field was under way on a large scale, with daily production soaring rapidly. Drilling activity in the field reached its peak during the week ended September 1, with a total of 233 operations, but the field did not establish its record breaking mark in actual daily production until the middle of November when slightly more than 350,000 barrels of oil was produced and handled by the various pipe lines, nearby tank farms and tank car loading racks serving the field. Considerable production was shut in for lack of pipe line and storage facilities when this high mark was set. About the time the output of the field reached its peak, the trend of production to the southwest was virtually defined, giving the field a length of seven and one-tenth miles in an uninterrupted line proven for production, with the widest point being about 3800 feet, and averaging less than 2500 feet in width.

The most prolific area in the Corsicana-Powell field was found in the southwest end on the Crews, Phillips, Flemming, Cerf, Davis, Kellum and Kent leases, with initial production ranging as high as 20,000 barrels daily, and it was the exhaustion of the flush production from these leases after a normal life of 30 days per well that caused the field to make its spectacular slump during the last two weeks in November and early part of December. The field finished the year with a daily average of approximately 73,000 barrels, while less than two months previous it was commanding the attention of the petroleum world with a daily output of 350,000 barrels. About 550 producing wells were completed in the Corsicana-Powell field during 1923.

Besides establishing a high record for actual daily production, the Corsicana-Powell field broke all previous records for the entire country on daily production for one concern in one field when the Humble Oil & Refining Company registered an actual output of 120,046 barrels of oil during the 24 hour period ended November 13, and 116,465 barrels on the following days. At the close of December the Humble's actual production was down to 25,000 barrels daily. The field afforded the quickest turnover on money expended for drilling than any major oil producing area in the country, and new records were set in making fast drilling time. Operators avoided the, heretofore, usual 10-day shutdown for cemented casing to set before drilling in by universal use of chemical quick setting compounds that gave satisfactory results within 72 hours, thereby speeding up the completion of wells by seven days.

1924 Prospects

At the close of 1923 the Corsicana-Powell field's producing structure appeared to have been defined, and virtually all locations had been drilled or occupied by a rig, while late completions are confined mostly to pumping wells. The series of shallow oil and gas sands ranging form 500 to 1800 feet in depth offer some possibilities for continued drilling during 1924, but this development will be of only minor importance from a production standpoint. The possibilities of a deeper producing horizon on the Corsicana-Powell structure proper is yet to be determined.

The big flush production and quick turnover on the money invested in the Corsicana-Powell field has caused the major companies as well as independent concerns and individuals to seek other fields of this type and from the same producing formation, and preparations were being made towards the close of 1923 to launch a big wildcat campaign in the fault zone extending northeast of the Corsicana-Powell field and up into Hopkins county.

Archer County

The completion of a 350 barrel flowing well on the L. F. Wilson ranch in east half of Archer County and two miles east of the old Gose field by the McCarty Oil Company during the first week in March, 1923, from sand at 1571-75 feet is largely responsible for the year just ended being the most active in the history of petroleum in the county. This well was drilled in terri-

tory thought condemned for production by deep dry holes, and opened up what is now called the Peterson pool, which received its name from one of the owners of thhe discovery well. The successful drilling that followed in this pool in later months encouraged wildcatting, and in June, 1923, he Sunshine pool was discovered about two miles to the southwest by the Sunshine State Oil & Refining Company on the W. Parrish land with initial flow of 300 barrels from sand at 1571-74 feet. During the same month the Wilmot-Wilson pool was brought in several miles to the east of the Peterson pool by A. T. Sibley-Sweatt and others on the H. Wilmot land good for 150 barrels oil at 1603-06 feet. This latter pool was given imporant extensions to the northeast, east and southeast towards the close of 1923, and was furnishing some of the largest wells ever recorded in the county. Its limits and possibilities are yet unknown, but the Peterson and Sunshine pools are practically defined.

The Swastika pool in southwest part of Archer County derives its name from the Swastika Oil Company, which completed the first producer in the J. T. Richardson land April 23, 1923, making 100 barrels oil and some water from sand at 1381 to 1394 feet. The completion of this well placed production in an entirely new section of Archer county, and has since been followed by the completion of nearly 20 additional wells, with possibilities of an important field being developed as soon as a pipe line is built to the pool. During the last week in December, 1923, a mile extension was made to the southeast of the proven area, and an active development program is expected in 1924.

Young County's most promising shallow pool was uncovered May 12, 1923, by the Peters Oil Company on the S. G. Kemp land, section 401, T. E. & L. Co., land, making 55 barrels from sand at 1071 to 1075 feet. Several additional wells have been drilled since this well was brought in, while the trend of production to the south is cut off by dry holes. It is expected that this general section of upper Young County will receive attention of wildcatters during 1924 in the strength of the Kemp wells, and closeness of the Swastika pool in Archer County. M. J. Bashara's wildcat producer on Bashara land, section 2920, in west half of Young County, opened up a new pool with initial flow of 75 barrels oil and equal amount of water at 2818-20 feet in August 1923. A pipe line was promised for this well by early part of 1924, and it is expected that several offset tests will then be started to determine the possibilities of the 2800-foot sand.

The first new territory to be proven for oil production in North Texas in 1923 was the east edge of Clay County, where the Gulf Production Company's Carl M. Worsham 1, section 6, flowed by heads at rate of 250 barrels 42.3 gravity oil with shot in lime pay at 3383 to 3446 feet, after drilling to 3505 feet and plugging back. This well paid for itself in about three months after being completed, but a 4000-foot offset to the northeast drilled by Gulf failed to encounter oil or gas after drilling to 3885 feet. Gulf is now drilling a west offset to the producer, which will probably prove or condemn the area as a field. A new shallow pool was uncovered in northwest part of Clay county, in May, 1923, when the Knox Finley Development Company's Saner Bros. 1 tested good for 30 barrels at 1127 feet. No important developments have occurred since this well was completed and placed on the pump.

A new gas producing area was uncovered in Wheeler County section of the Panhandle district in early part of August, 1923 when Roy Schenck & French's C. C. George 1, section 86, block 17 blew in good for 10,000,000 cubic feet of dry gas at 1974-84 feet. A second gas producei was completed from this pay in September by J. O. Whittingon and others with initial flow of 30,000,000 cubic feet daily, and considerable activity is promised for this county in 1924 as it is due west of the oil producing area in Beckam County, Oklahoma. Gray County section of the Panhandle district was proven for gas production during last month in 1923 when the Texas Company's Saunders 1, section 3, block 1, gauged 20,000,000 cubic feet daily at 2370 feet. It is expected that oil production will be found below the gas formations in both Wheeler and Gray Counties, as both are on a line between the oil field along the Hutchinson-Carson County line and the Beckham County, Oklahoma producing area.

West Texas

Efforts waged by wildcatters for the past five years in West Texas for a high gravity field became partially rewarded May 28, 1923, when the Texon Oil & Land Company's test on University of Texas land in Reagan County began flowing by heads at rate of 80 barrels 38 gravity oil daily from top of pay at 3026 feet. This wildcat producer is more than 50 miles from the nearest deep test, and is generally conceded to be one of the most important discoveries made in Texas in 1923 outside of the Corsicana-Powell field. The Reagan County well was not put on the pump until early part of August, 1923, and then made 200 barrels daily with small quantity of water through leaky casing seat. It has since held up steadily to an average of 150 barrels daily, with no indications of declining in production. This discovery well and leases on 16 adjoining sections of land were sold in October to the Big Lake Oil Company, which is expecting to complete the first offsets to the discovery well early in 1924. About 15 tests have been contracted for in this immediate section of West Texas as result of the favorable showing made by the Reagan County discovery well, and in the event of a large initial production is obtained from the offset tests being completed by the Big Lake Oil Company a big drilling campaign is sure to take place in 1924, while preliminary plans have already been made for a pipe line to the field.

A shallow pool was uncovered near Carbon in south part of Eastland County early in December, 1923, when C. Rosenfield and others' Gilbert 1, section 6, block 2, pumped 25 barrels daily from sand pay at 482-87 feet, and gives promise of affording a fair amount of activity in 1924 for spudding machine drillers.

Louisiana

Prospects looked bright to Louisiana producers at the beginning of 1923. Crude prices began rising on January 18, and five successive raises, totalling 60 cents per barrel, followed in rapid succession between that date and February 17, the date on which the last raise of the series was posted. But the effect of the California flood was felt during the last days of April, when the downward trend began. The gravity system of purchasing was abolished by a cut posted on August 3, and by November 15, the date of the last reduction of the year, Louisiana light oils had been reduced by 85 to 90 cents per barrel. However, proration, the bane of the producers' existence in other fields, was not resorted to in Louisiana during the year.

The movement of the crude market during 1923 would serve well as a barometer of the wildcat activitv during the same period. Prospecting was widespread during the early months of the year, but it subsided in mid-summer and has not yet been resumed. Notwithstanding this, however, two new fields were discovered, one near Oakland in Union Parish, and another near Cotton Valley in the northern part of Webster Parish.

Opinion, as usual, is divided as to the merit of these two discoveries, there being some who see in the completion of a pumping (discovery) well at Oakland only a repitition of the unprofitable drilling at Stephens, Arkansas, and some who fear that the discovery well at Cotton Valley may blow into water if, when opened up for any great length of time. On the other hand there are others more optimistically inclined who believe that better wells may be obtained on more favorable structural locations at Oakland and that the Cotton Valley well may rival the famous gushers of Homer when permitted to blow itself in. If the optimists, who are in the majority, are right, Louisiana will have two new booms developing simultaneously during a rising crude market in 1924. What more could mortals ask?

Arkansas

It seems that when the pendulum of interest swings into Louisiana, Arkansas is left deserted and barren of activity; and that the reverse is true. For instance, the pendulum swung from Homer to El Dorado, to Haynesville, to Smackover, and now back to Oakland and Cotton Valley. This may be explained by the theory that the men, machinery and interests who operate in both states are identical, and that activity follows them back and forth as they move from one boom to the next.

If this rule holds good, there is likely to be comparatively little development in Arkansas during the early part of 1924, as doubtful returns have caused a halt at Stephens and as the Smackover campaign is nearing its close, save for some additional drilling around Louann and Norphlet, which probably will be conducted in a leisurely manner. However, the discovery of a new field in Arkansas would, as always, upset all the dope.

BOYKIN
"Greyhound" PRODUCTS

—A Guarantee of "More Speed and Endurance"

The sale of these superior products during 1923 was even more gratifying than was hoped for. The sturdy construction, coupled with the drilling time, savings on repairs and hard labor, earned the hearty recommendation of every drilling contractor, operator and driller who used Boykin "Greyhound" Products.

Boykin Products are dependable, and a guarantee to long, continuous service. They are the result of actual field experience, plus expert manufacture of highest grade material.

They speed up drilling and last longer.

Ask any user of Boykin Products, or write "Bert" Childs, sales manager, 302 Humble Bldg., Houston, Texas, for complete information and prices.

The "Greyhound"
ROTARY
A pipe-screwing rotary that saves you time, hand labor and maintenance.

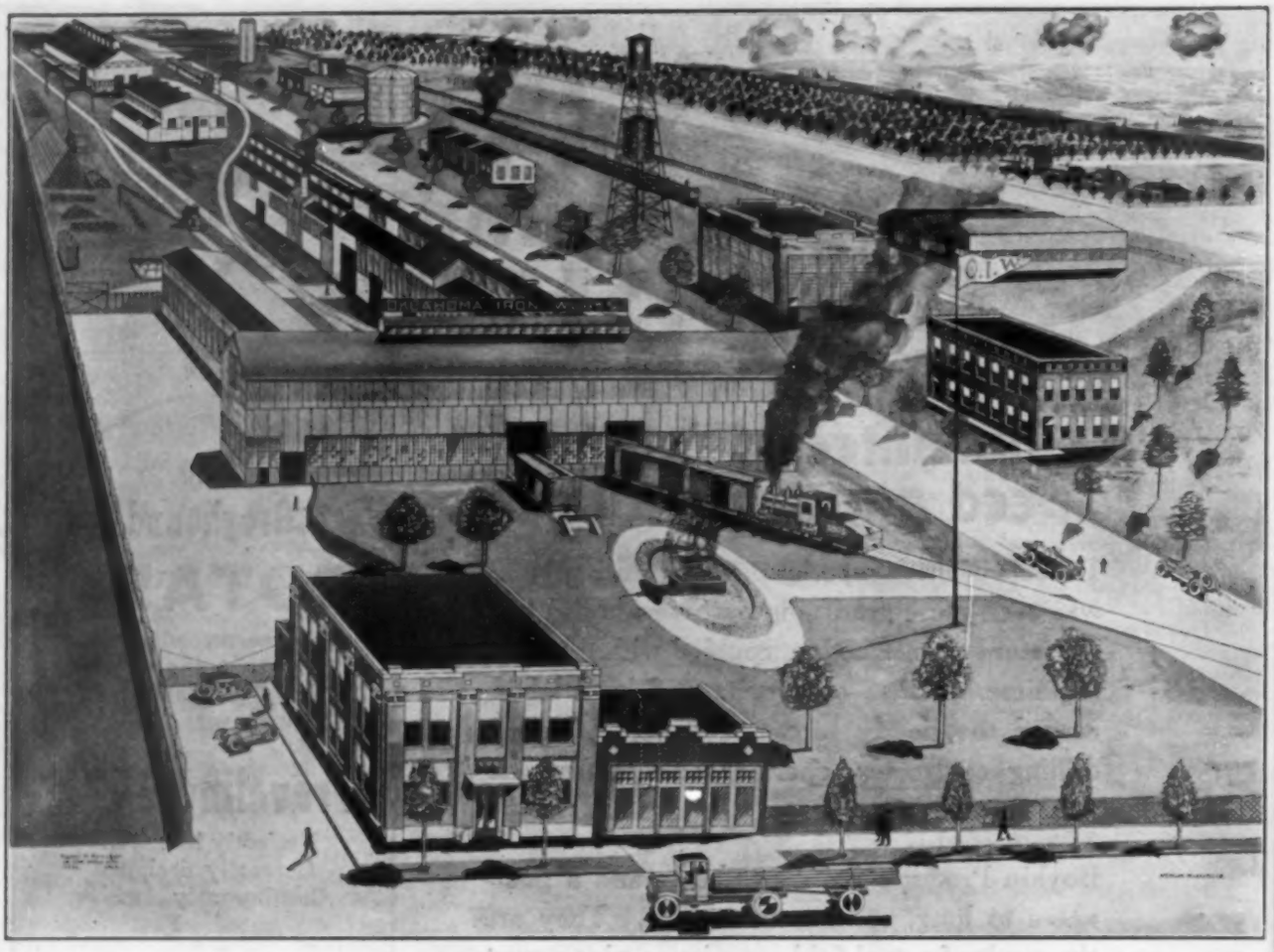
Traveling Block
Perfectly balanced
Correctly designed
Continuously Lubricated. Fast

Crown Block
Removable Bearings
Perfectly Lubricated
Over Sized Sheaves
Exceptionally strong

Tool Joints
Withstand Severe Abuse
High Quality Steel
Coarse, Rugged Threads

Tubing Blocks
etc.

BOYKIN MACHINERY & SUPPLY CO.
HOUSTON
BEAUMONT -:- CORSICANA -:- SHREVEPORT



Drilling Tools
Fishing Tools
Rig Irons

Rig Irons Sold and Distributed Exclusively Through International Supply Company

Oklahoma Iron Works

MANUFACTURERS AND WHOLESALERS

General Offices and Works at Tulsa, Oklahoma

Say you saw it in The Oil Weekly

"ISCO" connects oil field supply manufacturers *and* users through SERVICE~*Good Service!*

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ADV. 4

INTERNATIONAL SUPPLY CO.

Branch stores in 18 of the leading oil field towns in Oklahoma, Kansas, Wyoming and Montana.

General Offices and Works
Tulsa, Okla.

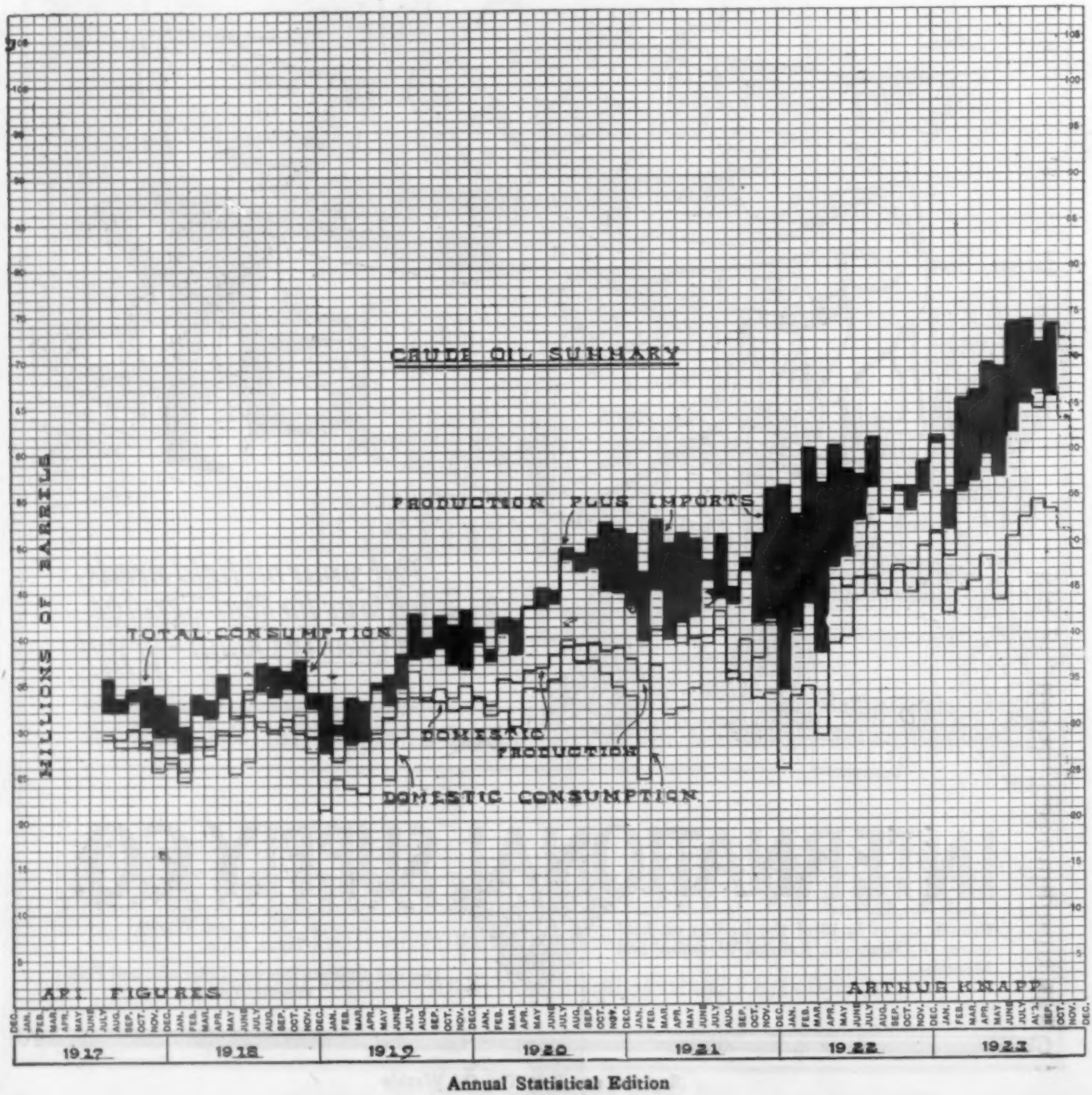
District Offices: Denver, Colorado, and Fort Worth, Texas

Say you saw it in The Oil Weekly

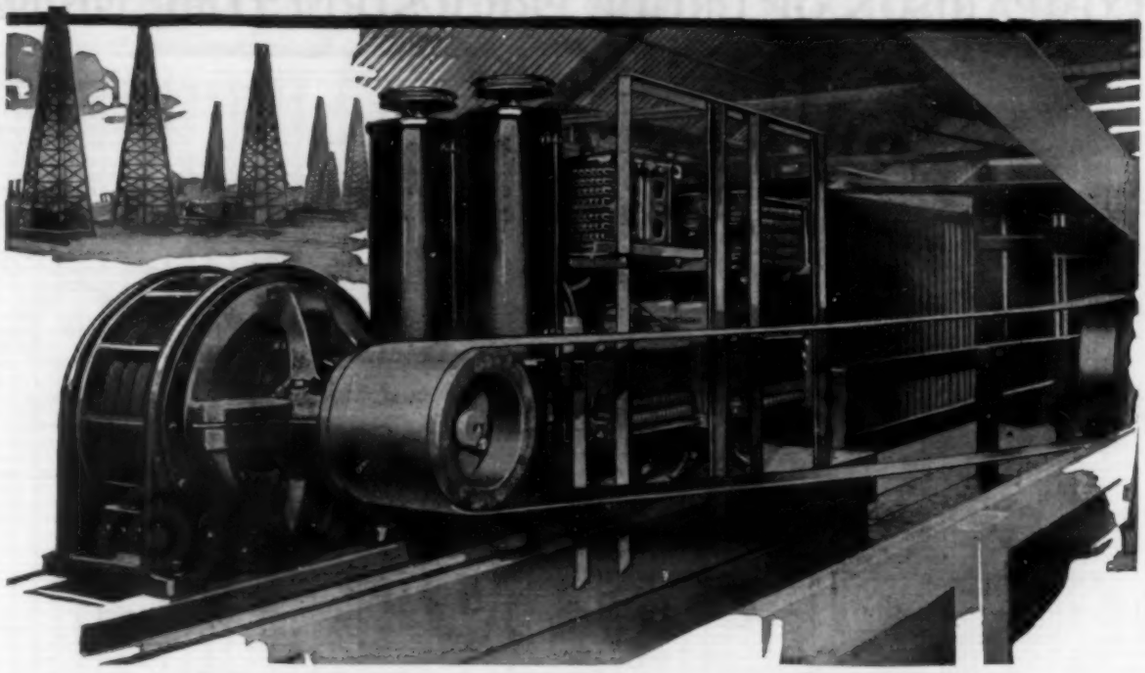
Summary of Crude Petroleum from 1917 to 1924

The graphs on the succeeding pages were prepared especially for The Oil Weekly's Annual Statistical Issue by Arthur Knapp of Philadelphia. Mr. Knapp is known as one of the closest students of the oil business in the United States, and his graphs on various phases of the oil industry have won for him wide reputation among petroleum technologists and statisticians.

We therefore feel that we are especially fortunate in presenting the various phases of the oil producing business accurately charted by such an authority, and wish to express our thanks to him herewith.—Editor.



Annual Statistical Edition



G-E oil well drilling motors give cable tools the right motion

Cable-tool drilling requires that the tools shall have a free drop. G-E drilling equipments are automatically controlled to speed up on the down-stroke and slow down on the up-stroke, precisely as required for cable-tool work.

G-E 75 HP. drilling equipment provides over 100 possible speed variations, the exact speed needed for drilling being obtained by the auxiliary controller. Coarse speed adjustments are made by the main controller, which is also used for reversing the motor.

Even the old and skeptic drillers are admitting that electric drive is superior to steam.

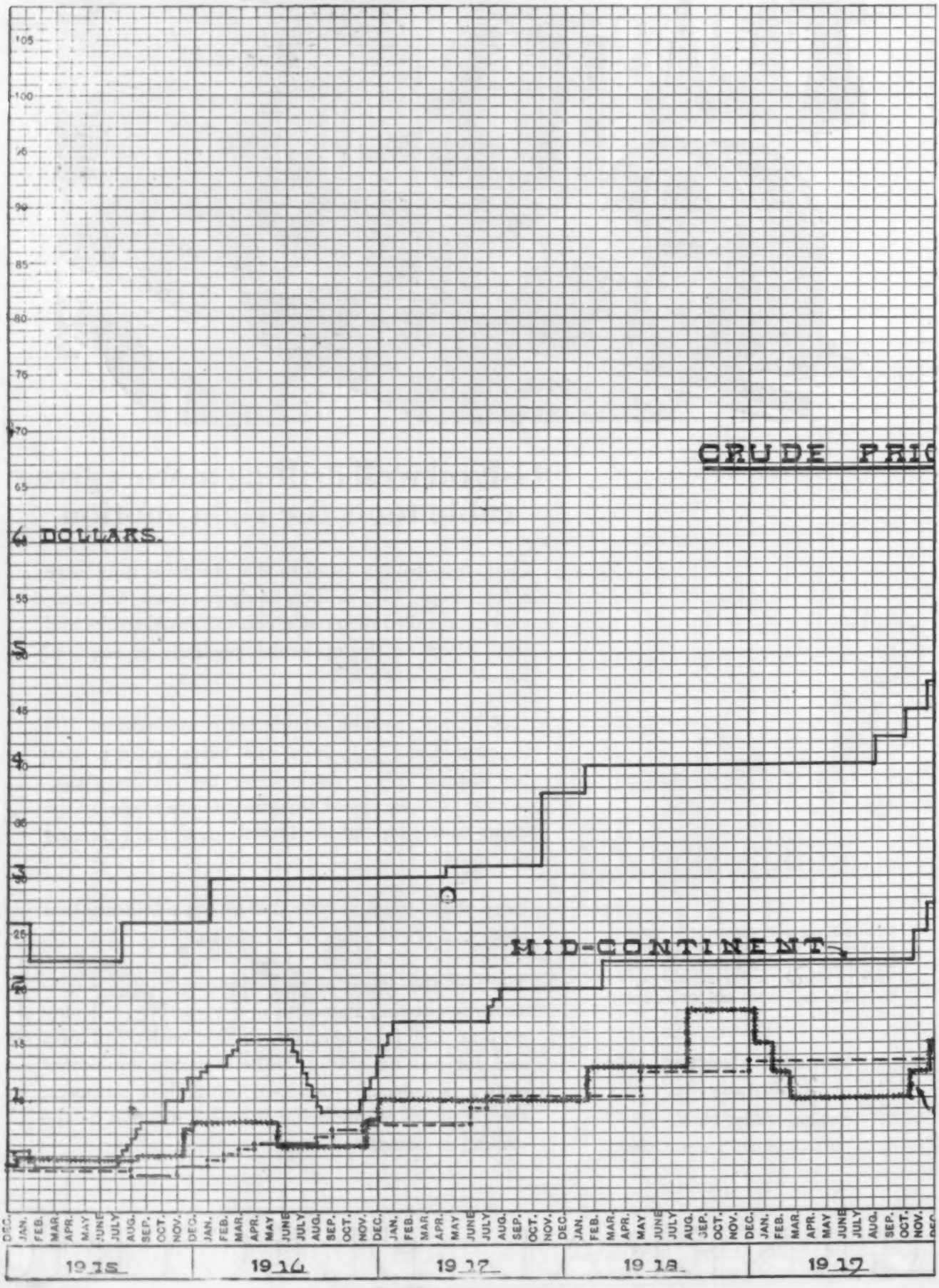
The G-E two-speed oil well pumping motor is consistently proving its worth and versatility. It may even be used for emergency drilling with small tools and for pulling casing. The separate equipment shown is especially designed for drilling purposes, the pumping motor being installed as soon as the drilling is completed.

The G-E oil well specialist in your district will gladly give you further information as to the many advantages of electric motor drive.
Technical papers 503 and 504 mailed on request.

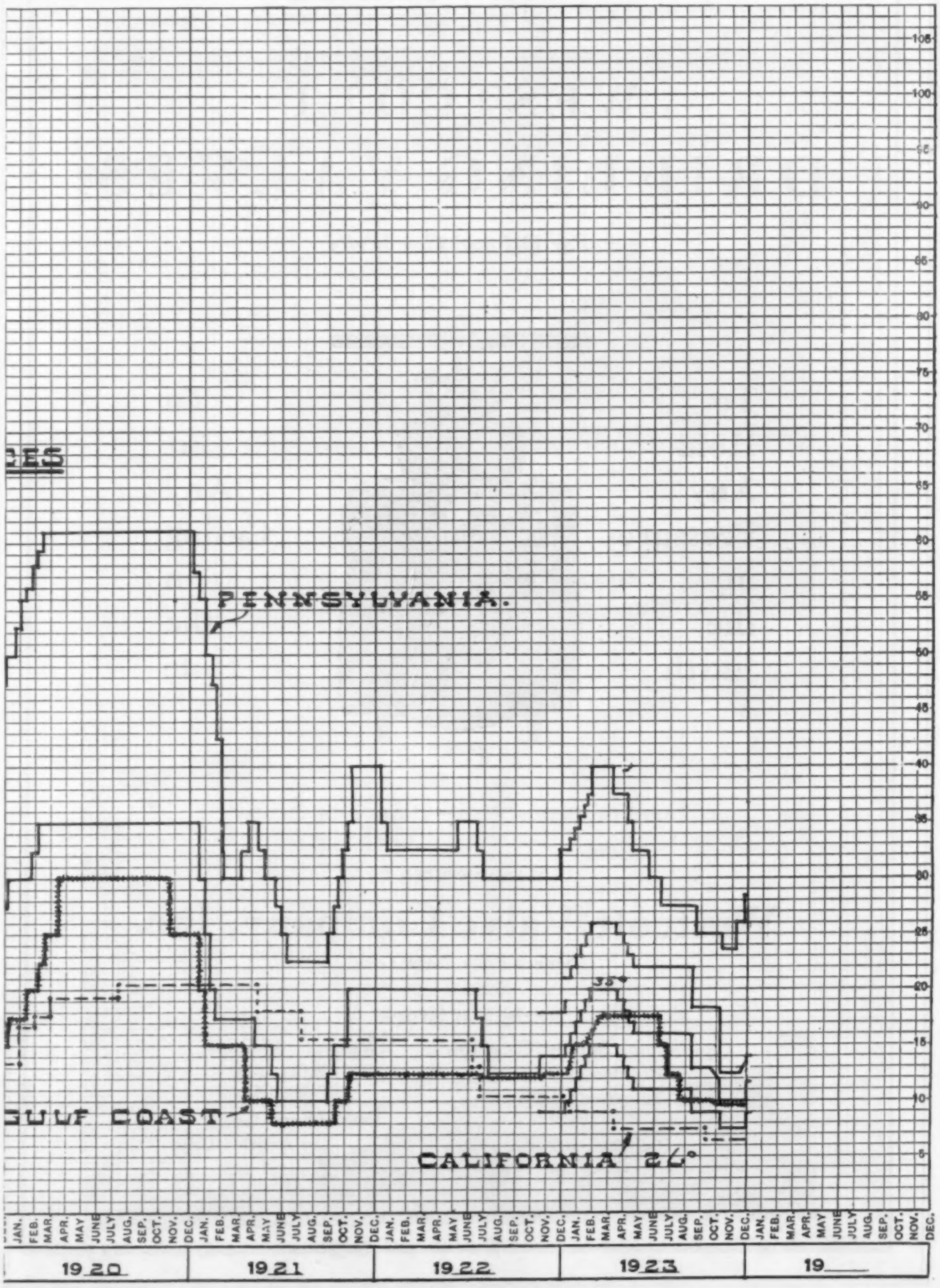
General Electric Company
Schenectady, N. Y.
Sales Offices in all Large Cities

GENERAL ELECTRIC

COMPARISON OF CRUDE PRICE STRUCTURE 1915-1923



COMPARISON OF CRUDE PRICE STRUCTURE 1915-1923



WESTCOTT
DRILLING VALVES

For Oil and Gas Wells

To Hold Any Pressure in the Earth

To Fit Any Casing in the Hole

Steel or Semi-Steel—Flange or Screw

Manufactured by

Westcott Valve Company, Inc.

Seneca Falls, New York

Carried in Stock At

Continental Supply Co. Stores:
Houston, Tex.
Shreveport, La.
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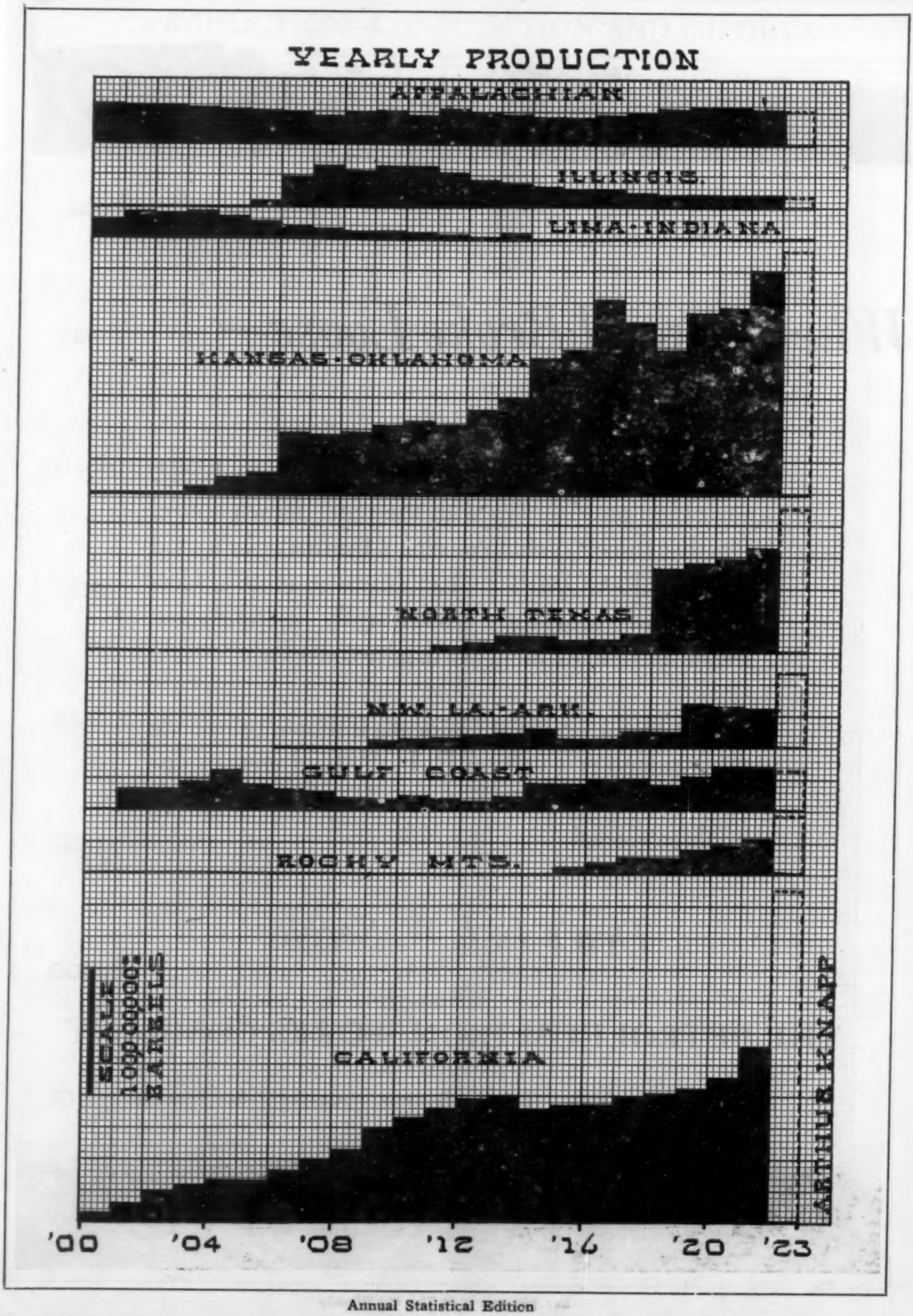
Westcott & Greis:
Dallas, Tex.
Tulsa, Okla.

DuVal-Kirk Co.:
Los Angeles, Calif.


YEARLY PRODUCTION
APPALACHIAN
ILLINOIS
LIMA-INDIANA
KANSAS-OKLAHOMA
NORTH TEXAS
N.M. LA.-ARK.
GULF COAST
ROCKY MTS.
CALIFORNIA
SCALE
100,000,000
BARRELS
'00
'04
'08
'12
'16
'20
'23
ARTHUR KNAPP

When Powell Broke Loose—

Humble needed tanks, and needed them badly. They called on P. I. W. with the result shown above. In less than three days from receipt of the first order a solid trainload of 10 COMPLETE 55's was en route to Corsicana, making record time. Following the first train came a second and a third, all in less than two weeks.

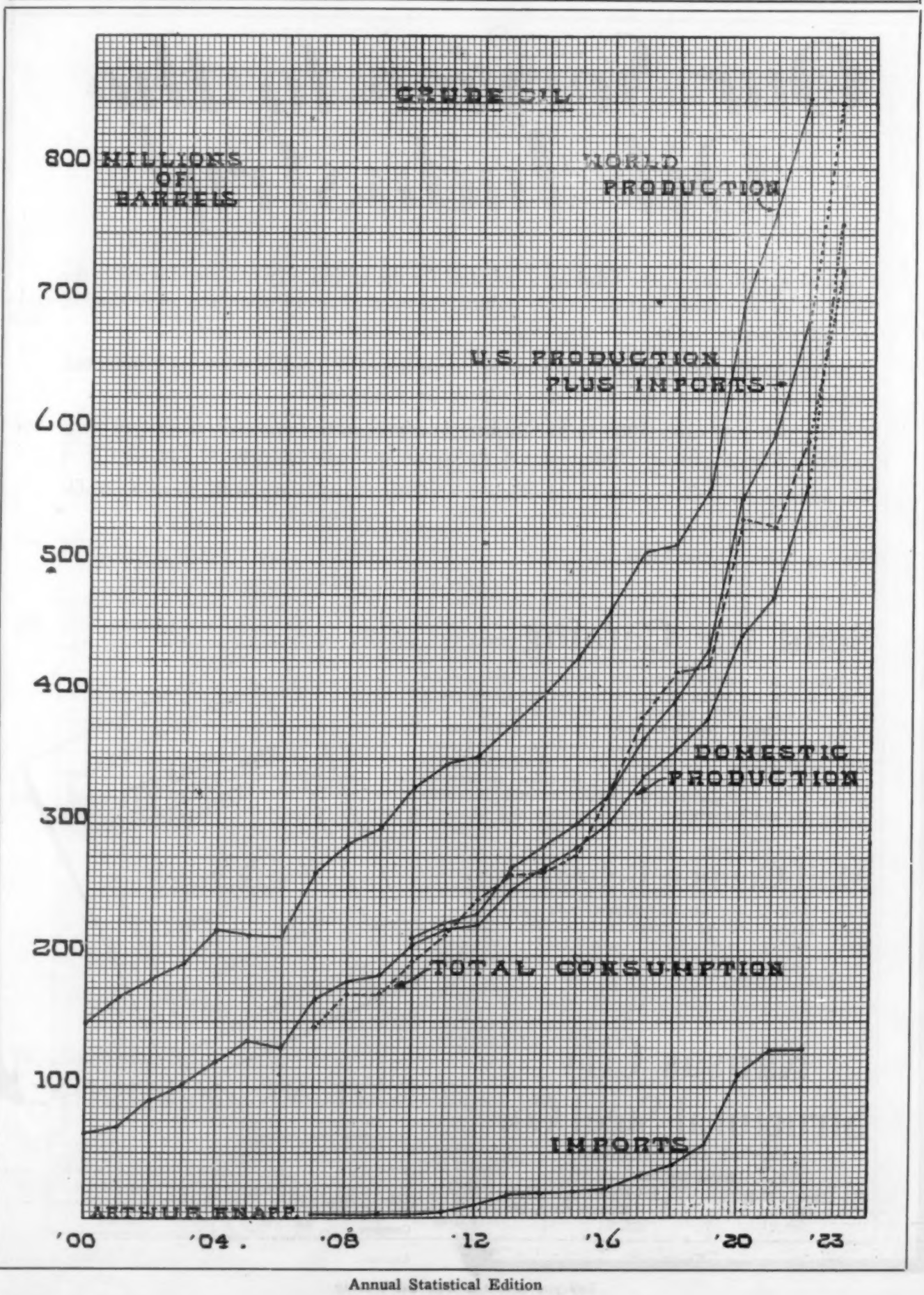
The Humble farm at Corsicana is shown below. In the foreground is a veteran P. I. W. field crew. The progress of the work can be seen. Ready for oil in less than three weeks!

That's P. I. W. Service

THE PETROLEUM IRON WORKS COMPANY
SHARON, PA.

New York St. Louis Tulsa Houston Casper San Francisco

PRODUCTION—CONSUMPTION AND IMPORTS



Our Service to the Oil Industry!

Years of experience in the fabrication of steel for the oil industry has made possible the adoption of standards that materially reduce the cost of every operation over that of specially designed units.

Through standardization stocks are made interchangeable, much waste is eliminated, engineering costs are minimized and early delivery is possible.

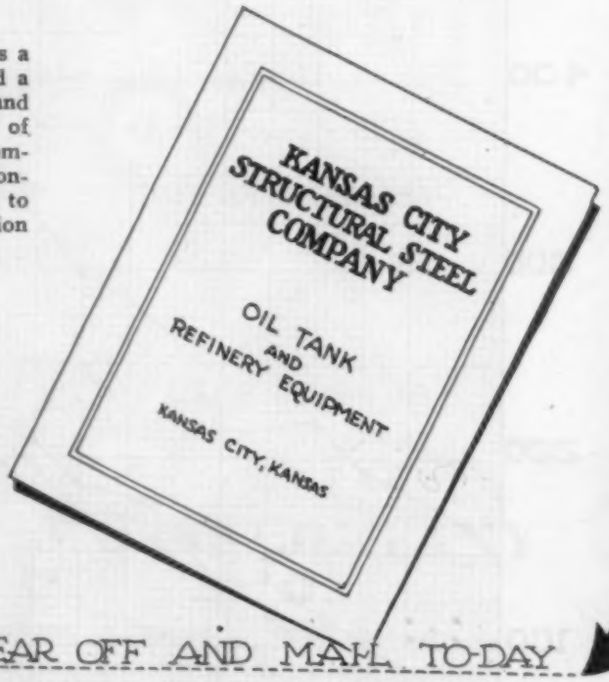
It is our policy to carry 5000 to 55,000 barrel tanks in stock completely fabricated ready for immediate shipment. Our material warehouse is the largest west of Chicago.

We maintain a well equipped and efficient erection organization with crews available for every field.

We are "Nearest the Field."

Send for Catalog—

In order to give our customers and prospective customers a better idea of the scope of our service we have prepared a very complete catalog showing photographs of tanks and refinery equipment completed and also in the process of construction; drawings of detailed construction and complete specifications. This is more than a catalog as it contains valuable tables and general information on how to prevent losses in the storage of crude petroleum, protection against fire and evaporation, tank foundation and dike.



Mail Coupon Below—

Every plant superintendent, engineer and purchasing agent should have one of these catalogs. We will be glad to mail you one today if you will fill out the attached coupon and mail it to us giving complete information indicated below.

Kansas City Structural Steel Co.

KANSAS CITY, KANSAS

Sales Offices:

805 Daniels Bldg., Tulsa, Oklahoma

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TEAR OFF AND MAIL TO-DAY

Please send your catalog to:

Name .....

Title .....

Company .....

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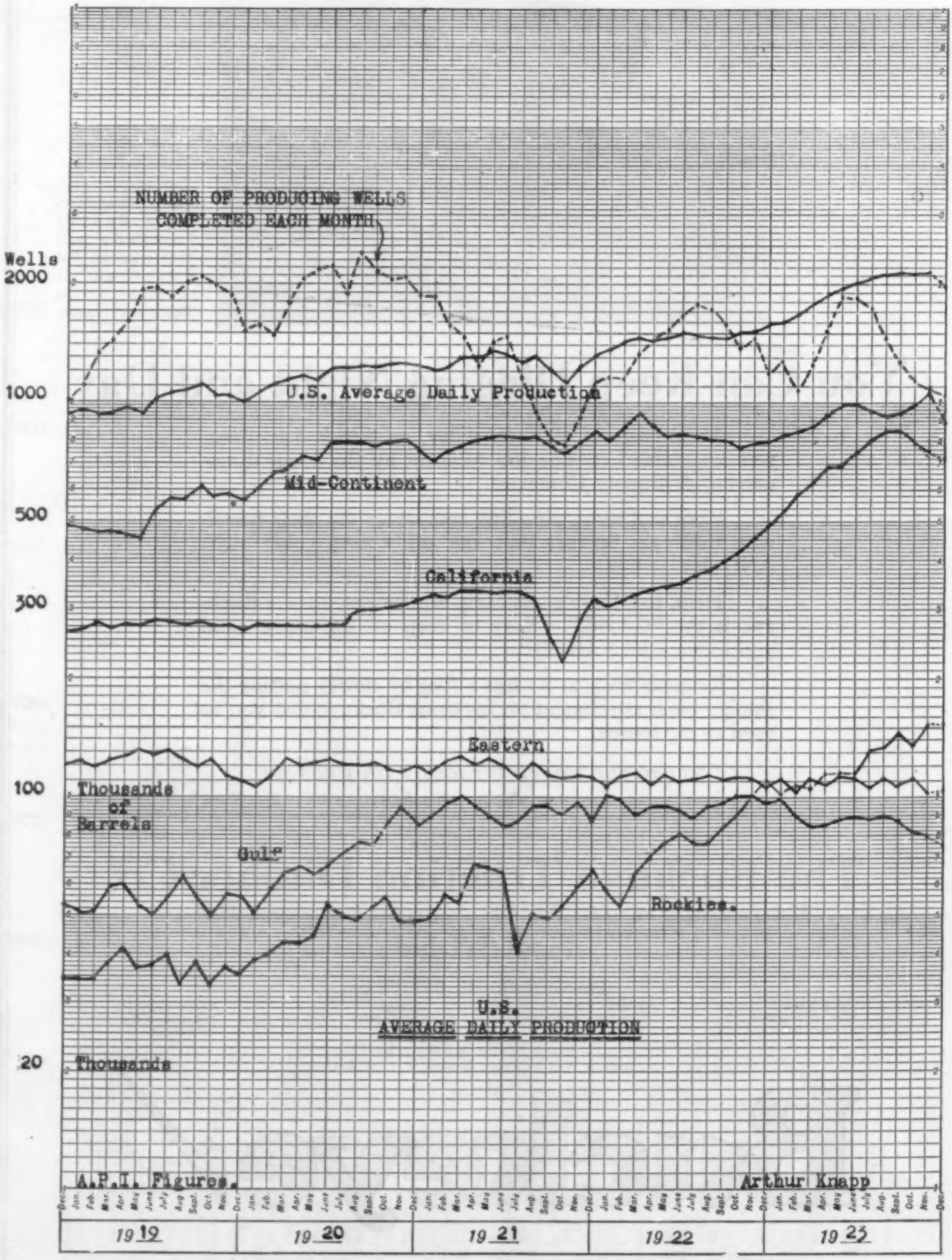
Say you saw it in The Oil Weekly

U. S. PRODUCTION AND FIELD STATISTICS



Hope Engineering & Supply Company will have nothing but Buckeyes for trench work. There's a reason.

You Can Keep Digging Night and Day

An average of 4000 ft. a day, on trench 4 ft. deep, was maintained on one job recently by the Hope Engineering & Supply Company.

More and more pipe line companies dig their trench with Buckeyes because they can easily keep going night AND day.

Then, too, there's less camp equipment when a Buckeye is the "GANG". Easy to keep on the move—and you move a lot FASTER.

Retainer walls at 5 cents a foot by simply putting the sloping bank attachment on the same Buckeye that you've used to dig trench.

You can cut trench for less with Buckeyes.
Let us show you how.

The Buckeye Traction Ditcher Co.

Manufacturers of Pipe-Line Trench Excavators and Pipe Screwing Machines

Findlay, Ohio

BRANCH SALES OFFICES:

New York
San Francisco
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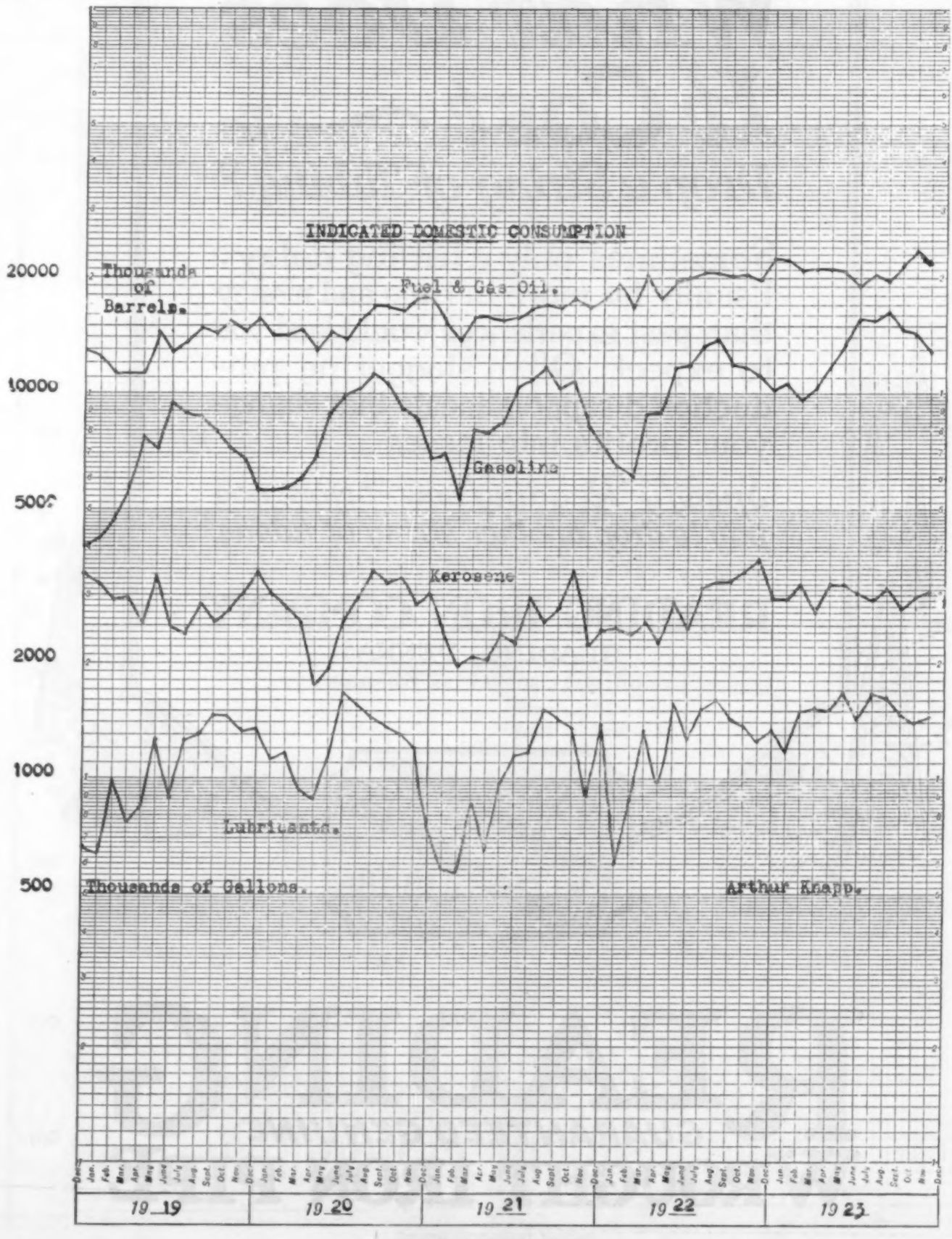
Buckeye

INDICATED DOMESTIC REFINED CONSUMPTION

(Gasoline - Kerosene - Lube - Fuel Oil)

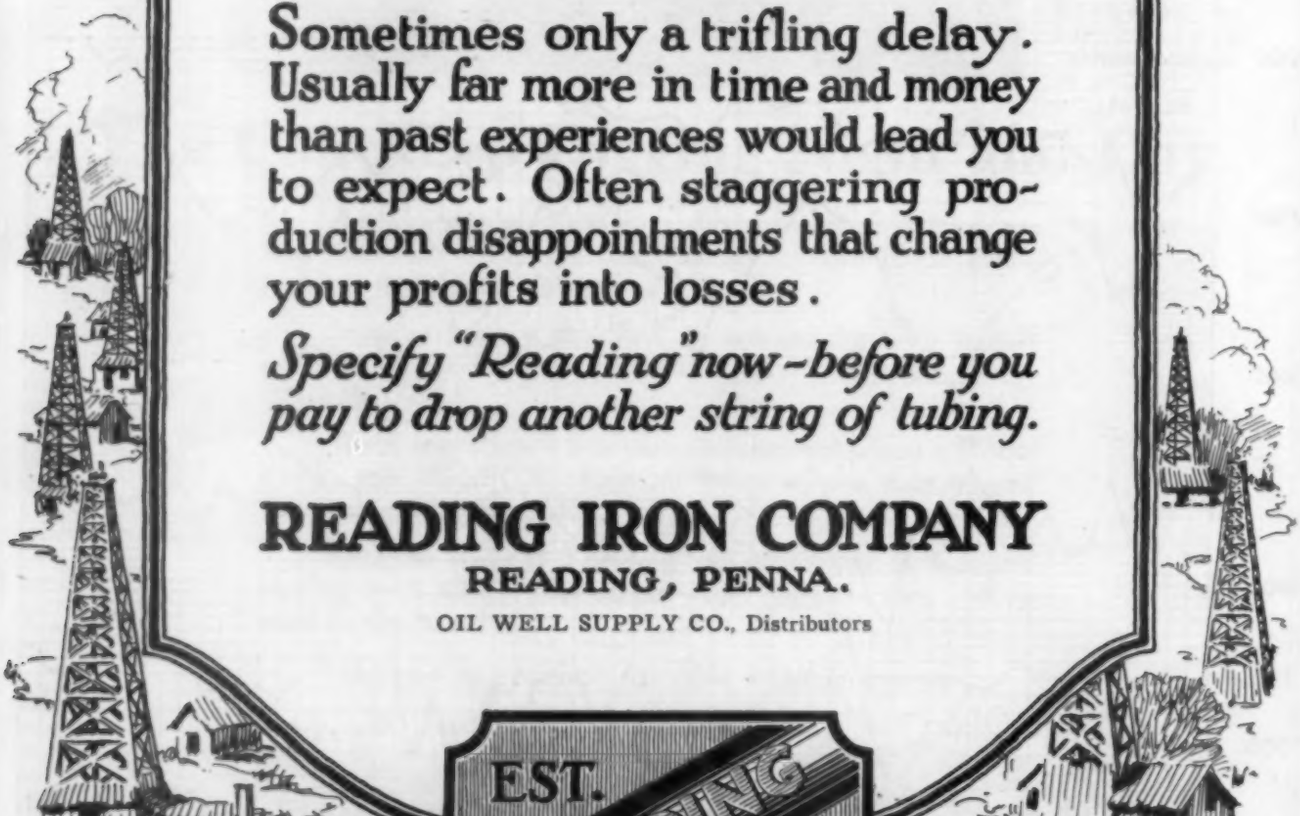


What Does It Cost — To Drop a String of Tubing?

Sometimes only a trifling delay. Usually far more in time and money than past experiences would lead you to expect. Often staggering production disappointments that change your profits into losses.

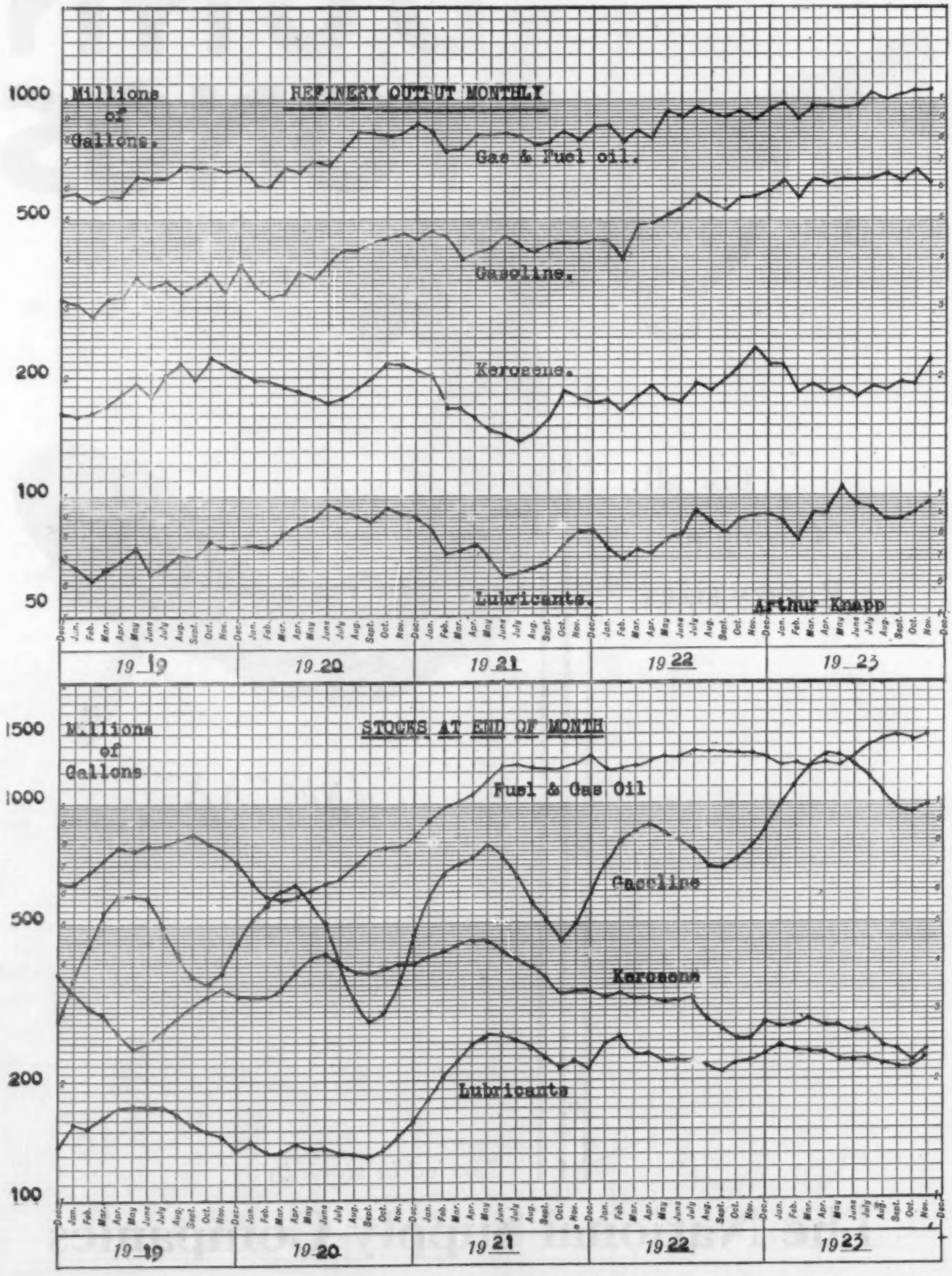
Specify "Reading" now—before you pay to drop another string of tubing.

READING IRON COMPANY
READING, PENNA.
OIL WELL SUPPLY CO., Distributors

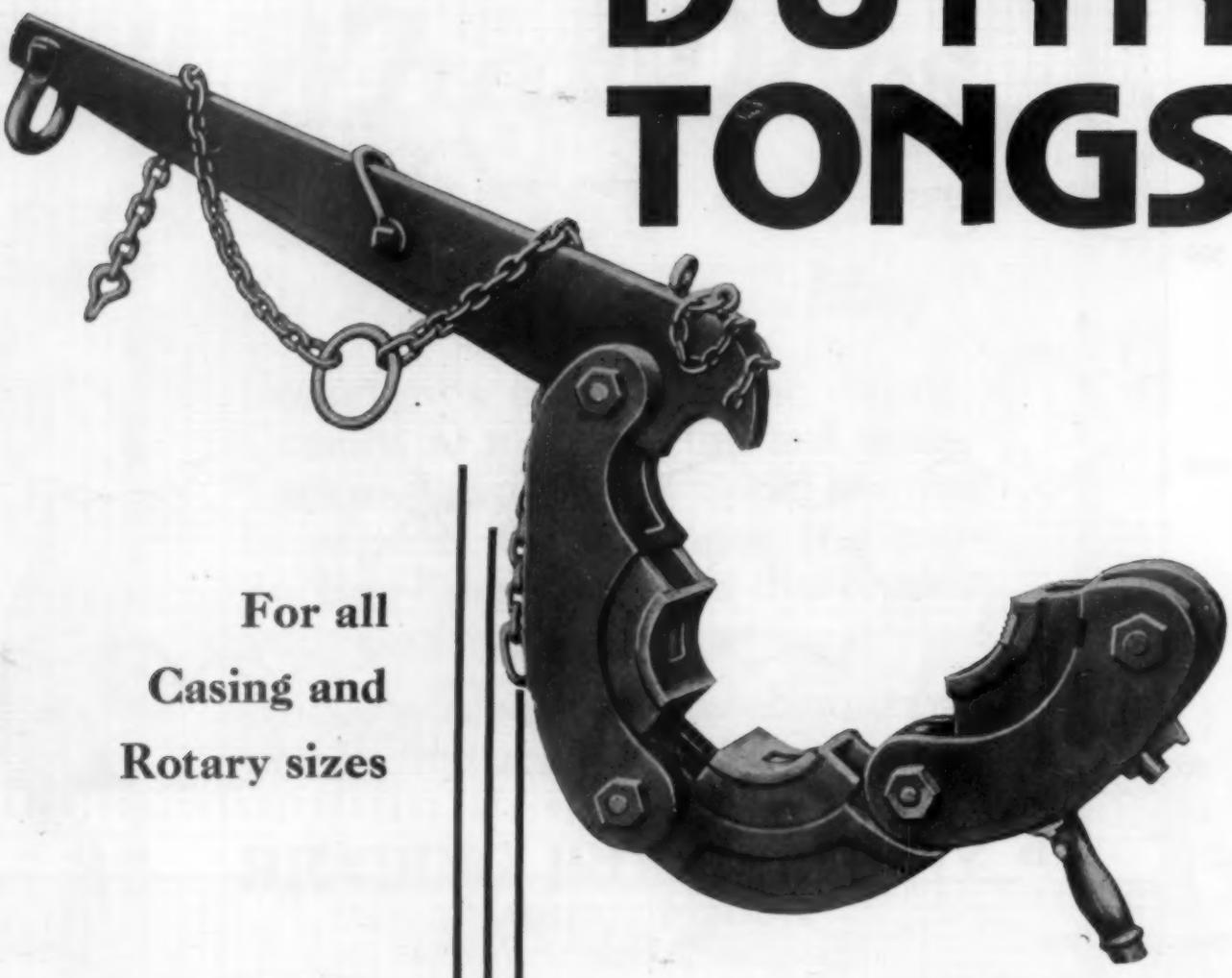


READING
GUARANTEED GENUINE
WROUGHT IRON PIPE

U. S. MONTHLY REFINERY OUTPUT AND STOCKS



DUNN TONGS

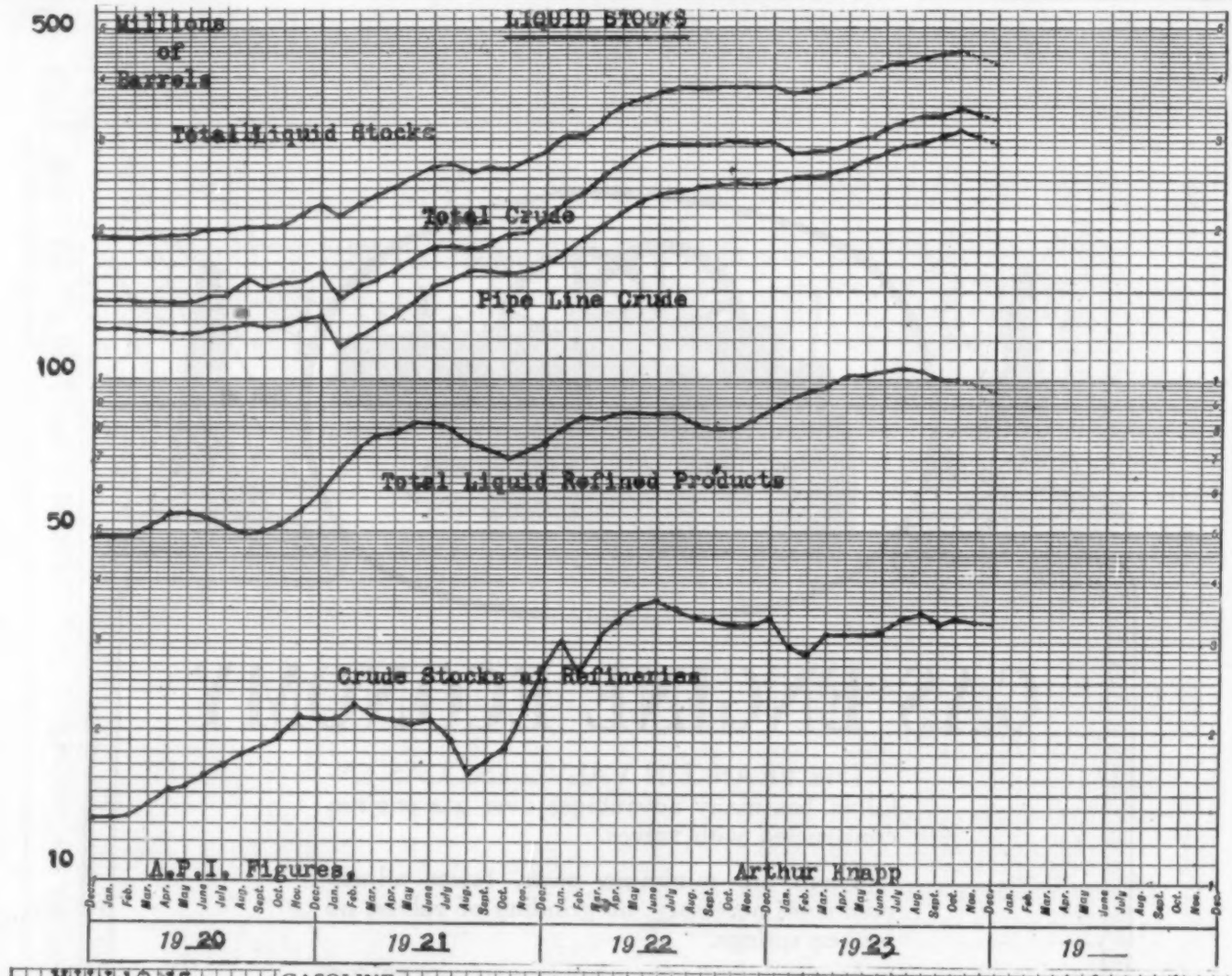


For all Casing and Rotary sizes

Type "XX"

Carried in stock by

The National Supply Companies


LIQUID STOCKS
Millions of Barrels
Total Liquid Stocks
Total Crude
Pipe Line Crude
Total Liquid Refined Products
Crude Stocks at Refineries
500
100
50
10
A.P.I. Figures.
Arthur Knapp
19 20
19 21
19 22
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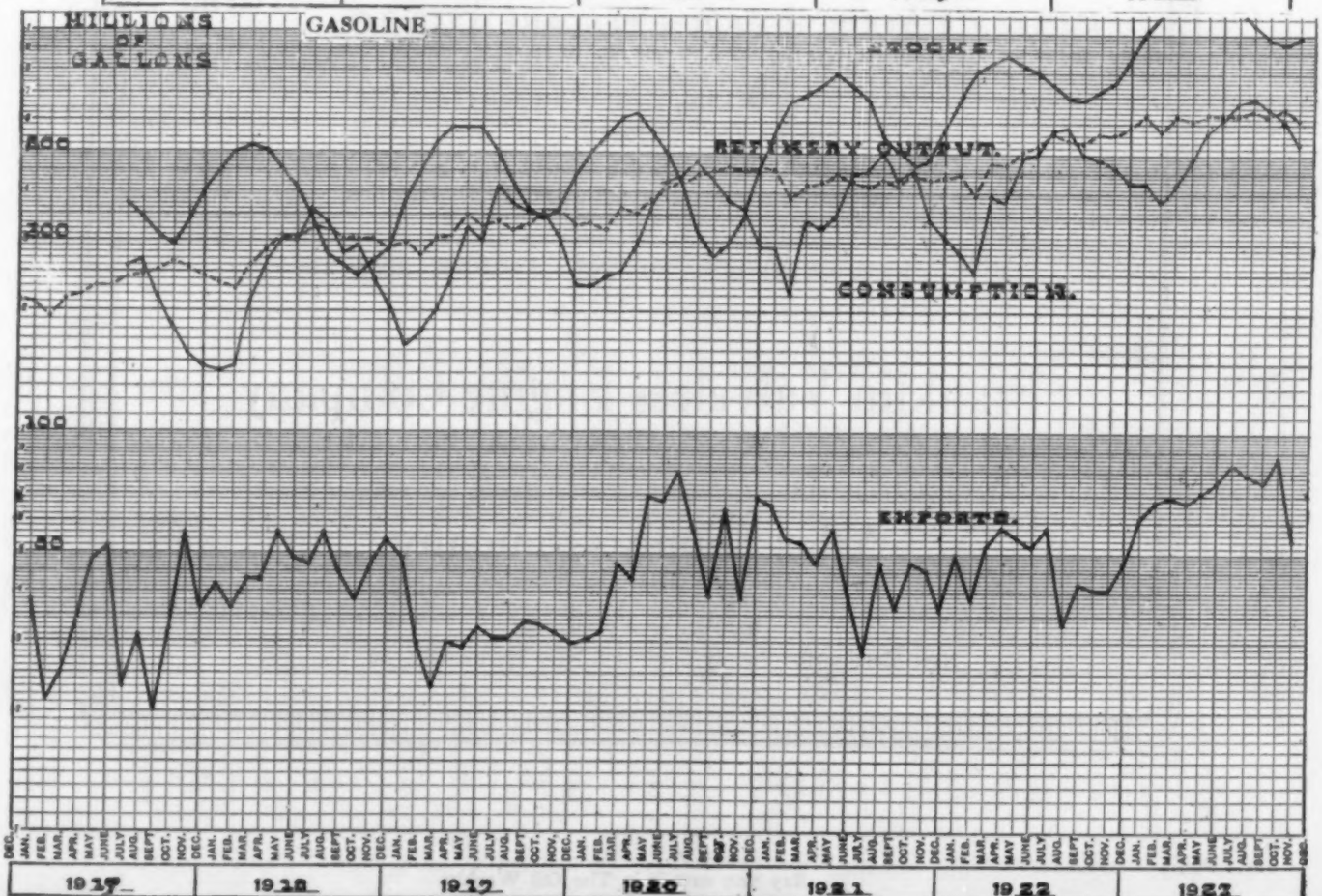
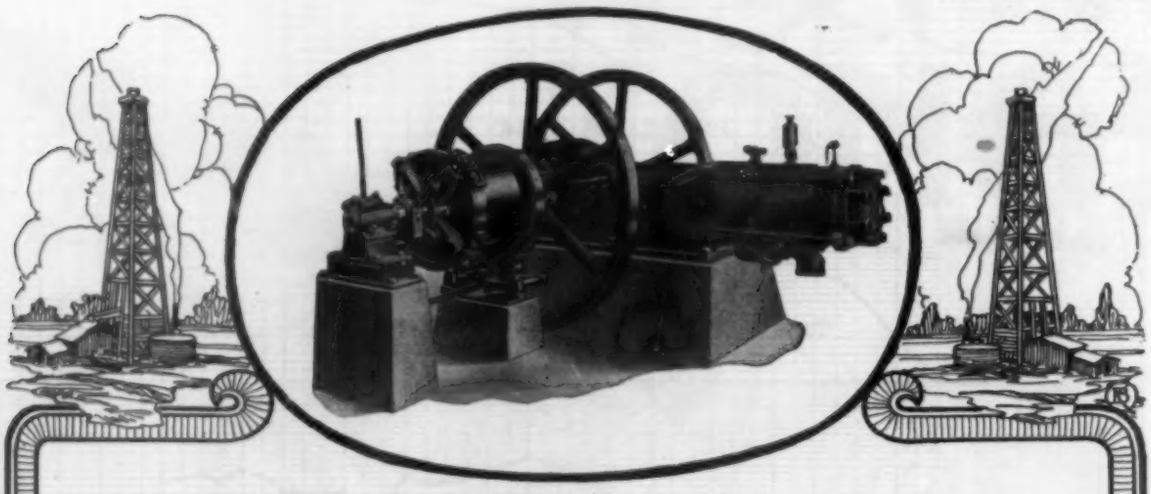

GASOLINE
MILLIONS OF GALLONS
STOCKS
REFINERY OUTPUT.
CONSUMPTION.
EXPORTS.
400
300
100
50
1917
1918
1919
1920
1921
1922
1923



GAS ENGINE ECONOMY

THE FRANKLIN VALVELESS GAS ENGINE has many advantages over gas engines constructed with valves.

There are minimum parts, fewer adjustments are necessary, no grinding of valves, no broken springs.

YOUR REPAIR BILLS ARE CUT TO A MINIMUM.

ALL FRANKLIN VALVELESS GAS ENGINES are of the enclosed type with splash oiling system thus saving about 75 per cent of the lubricating oil over open type engines using oil cups.

FEWER SHUT DOWNS—FEWER IDLE DAYS.

Franklin Valveless Engine Company

Franklin, Pennsylvania

Distributed in Oklahoma, Texas, Louisiana, Kansas and Arkansas by

Atlas Supply Company

Muskogee, Okla., and Branches

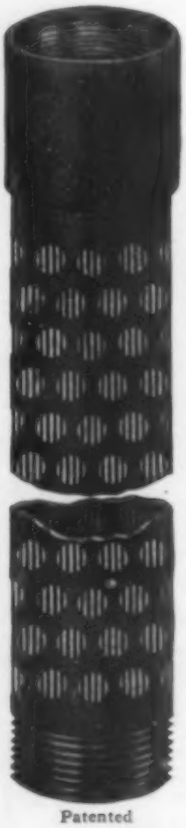
Ohio and West Virginia by

New Martinsville Supply Company, New Martinsville, W. Va.

World's Production of Crude Petroleum Since 1857, by Years and Countries, in Barrels of 42 Gallons

Year	Russia	United States	Italy	Canada	Russia	Galicia	Japan and Formosa	Germany	India	Dutch East Indies	Peru	Mexico	Argentina	Trinidad	Egypt	Other Countries	Total	Year	Pct. Prod. by U. S.
1857	1,977	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,977	1857	.00
1858	3,560	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,560	1858	.00
1859	4,349	2,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,349	1859	31.5
1860	8,542	500,000	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	508,578	1860	98.3
1861	17,279	2,113,609	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,130,917	1861	99.1
1862	23,198	3,056,690	29	11,775	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,091,692	1862	98.8
1863	27,943	2,611,309	58	82,814	40,816	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,762,940	1863	94.5
1864	33,013	2,116,109	72	90,000	64,686	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,303,780	1864	90.5
1865	39,017	2,497,700	2,265	110,000	66,542	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,715,524	1865	91.9
1866	42,534	3,597,700	992	175,000	83,052	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,899,278	1866	92.3
1867	50,838	3,347,300	791	190,000	119,917	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,708,846	1867	90.2
1868	55,369	3,646,117	367	200,000	88,327	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,990,180	1868	91.2
1869	58,533	4,215,000	144	220,000	202,308	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,695,985	1869	89.9
1870	83,765	5,260,745	86	250,000	204,618	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,799,214	1870	90.7
1871	99,030	5,205,234	273	269,397	165,129	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,730,063	1871	90.8
1872	91,251	6,293,194	331	308,100	184,391	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,877,267	1872	91.5
1873	104,036	9,893,786	467	365,052	474,379	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,837,720	1873	91.3
1874	103,177	10,926,945	604	168,807	583,751	149,837	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,933,121	1874	91.5
1875	108,569	8,787,514	813	220,000	697,364	158,522	4,566	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,977,348	1875	88.1
1876	111,314	9,132,669	2,891	312,000	1,570,578	164,157	7,708	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,051,267	1876	82.6
1877	108,569	13,350,363	2,934	312,000	1,800,720	169,792	9,560	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,753,938	1877	85.4
1878	109,300	15,396,868	4,329	312,000	2,400,960	175,420	17,884	.....	.....	.....	.....	.....	.....	.....	.....	.....	18,416,761	1878	84.7
1879	110,007	19,914,146	2,891	575,000	2,761,104	214,800	23,457	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,601,405	1879	84.3
1880	114,321	26,286,123	2,035	350,000	3,091,200	229,120	25,497	9,310	.....	.....	.....	.....	.....	.....	.....	.....	30,017,606	1880	87.6
1881	121,511	27,661,238	1,237	275,000	3,601,441	286,400	16,751	29,219	.....	.....	.....	.....	.....	.....	.....	.....	31,992,797	1881	86.4
1882	136,610	30,349,897	1,316	275,000	4,537,815	330,076	15,549	58,025	.....	.....	.....	.....	.....	.....	.....	.....	35,704,288	1882	85.0
1883	139,486	23,449 633	1,618	250,000	6,002,401	365,160	20,473	26,708	.....	.....	.....	.....	.....	.....	.....	.....	30,255,479	1883	77.5
1884	210,667	24,218,438	2,855	250,000	10,804,577	408,120	27,921	46,161	.....	.....	.....	.....	.....	.....	.....	.....	35,968,741	1884	67.3
1885	193,411	21,858,785	1,941	250,000	13,924,596	465,400	29,237	41,360	.....	.....	.....	.....	.....	.....	.....	.....	36,764,730	1885	59.4
1886	168,606	28,064,841	1,575	584,061	18,006,407	305,884	37,916	73,864	.....	.....	.....	.....	.....	.....	.....	.....	47,243,154	1886	59.4
1887	181,907	28,283,483	1,496	525,655	18,367,781	343,832	28,645	74,284	.....	.....	.....	.....	.....	.....	.....	.....	47,807,083	1887	59.2
1888	218,576	27,612,075	1,251	695,203	23,048,787	466,537	37,436	84,782	.....	.....	.....	.....	.....	.....	.....	.....	52,164 597	1888	52.9
1889	297,666	35,163,513	1,273	704,690	24,609,407	515,268	52,811	68,217	94,250	.....	.....	.....	.....	.....	.....	.....	61,507,095	1889	57.2
1890	383,227	45,823,572	2,998	795,030	28,691,218	659,012	51,420	108,296	118,065	.....	.....	.....	.....	.....	.....	.....	76,632,838	1890	59.9
1891	488,201	54,292,655	8,305	755,298	34,573,181	630,730	52,917	108,929	190,131	.....	.....	.....	.....	.....	.....	.....	91,100,347	1891	59.6
1892	593,175	50,514,657	18,321	779,753	35,774,504	646,220	68,901	101,404	242,284	.....	.....	.....	.....	.....	.....	.....	88,739,219	1892	56.9
1893	535,655	48,431,066	19,069	798,406	40,456,519	692,669	106,384	99,390	298,969	600,000	.....	.....	.....	.....	.....	.....	93,038,127	1803	52.6
1894	507,255	49,344,516	20,552	829,104	36,375,428	949,146	171,744	122,564	327,218	688,170	.....	.....	.....	.....	.....	.....	89,335,697	1894	55.2
1895	575,200	52,892,276	25,843	726,138	46,140,174	1,452,999	141,310	121,277	371,536	1,215,757	.....	.....	.....	.....	.....	.....	103 662,510	1895	51.0
1896	543,348	60,960,361	18,149	726,822	47,220,633	2,443,080	197,082	145,061	429,979	1,427,132	47,536	.....	.....	.....	.....	.....	114,159,183	1896	53.4
1897	570,886	60,475,516	13,892	709,857	54,399,568	2,226,368	218,559	165,745	545,704	2,551,649	70,831	.....	.....	.....	.....	.....	121,948,575	1897	49.5
1898	776,238	55,364,233	14,489	758,391	61,609,357	2,376,108	265,389	183,427	542,110	2,964,035	70,905	.....	.....	.....	.....	.....	124 924,682	1898	44.4
1899	1,425,777	57,070,850	16,121	808,570	65,954,968	2,313,047	536,079	192,232	940,971	1,795,961	89,166	.....	.....	.....	.....	.....	131,143,742	1899	43.5
1900	1,628,535	63,620,529	12,102	913,498	75,779,417	2,346,505	866,814	358,297	1,078,264	2,253,355	274,800	.....	.....	.....	.....	.....	149,132,116	1900	42.5
1901	1,678,320	69,389,194	16,150	756,679	85,168,556	3,251,544	1,110,790	313,630	1,430,716	4,013,710	274,800	10,345	.....	.....	.....	†20,000	167,434,434	1901	41.4
1902	2,059,935	88,766,916	18,933	530,624	80,540,044	4,142,159	1,193,038	353,674	1,617,363	2,430,465	286,725	40,200	.....	.....	.....	†26,000	182,006,076	1902	48.8
1903	2,763,117	100,461,337	17,876	686,637	75,591,256	5,234,475	1,209,371	445,818	2,510,259	5,770,056	278,092	75,375	.....	.....	.....	†36,000	194,879,669	1903	51.5
1904	3,599,026	117,080,960	25,476	552,575	78,536,655	5,947,383	1,419,473	637,431	3,385,468	6,508,485	345,834	125,625	.....	.....	.....	†40,000	218,204,391	1904	53.7
1905	4,420,987	134,717,580	44,027	634,095	54,960,270	5,765,317	1,472,804	560,963	4,137,098	7,849,896	447,880	251,250	.....	.....	.....	†30,000	215,292,167	1905	62.6
1906	6,378,184	126,493,936	53,577	569,753	58,897,311	5,467,967	1,710,768	578,610	4,015,803	8,180,657	536,294	502,500	.....	.....	.....	†30,000	213,415,360	1906	59.2
1907	8,118,207	166,095,335	59,875	788,872	61,850,734	8,455,841	2,001,838	756,631	4,344,162	9,982,597	756,226	1,005,000	101	.....	.....	†30,000	264 245,419	1907	63.2
1908	8,252,157	178,527,355	50,966	527,987	62,186,447	12,612,295	2,070,145	1,009,278	5,047,038	10,283,357	1,011,180	3,932,900	11,472	169	.....	†30,000	285,552,746	1908	62.5
1909	9,327,278	183,170,874	42,388	420,755	65,970,350	14,932,799	1,889,563	1,018,837	6,676,517	11,041,852	1,316,118	2,713,500	18,431	57,143	.....	†20,000	298,616,405	1909	61.3
1910	9,723,806	209,557,248	50,830	315,895	70,336,574	12,673,688	1,930,661	1,032,522	6,137,990	11,030,620	1,330,105	3,634,080	20,753	142,857	.....	†20,000	327,937,629	1910	64.0
1911	11,107,450	220,449,391	74,709	291,096	66,183,691	10,519,270	1,658,903	1,017,045	6,451,203	12,172,949	1,368,274	12,552,798	13,119	285,307	9,150	†20,000	344,174,355	1911	64.0
1912	12,976,232	222,935,044	53,778	243,336	68,019,208	8,535,174	1,671,405	1,031,050	7,116,672	10,845,624	1,751,143	16,558,215	47,007	436,805	205,905	†20,000	352,446,598	1912	68.9
1913	13,554,768	248,446,230	47,198	228,080	62,834,356	7,818,130	1,942,009	†995,764	7,930,149	11,172,294	2,133,261	25,696,291	130,618	503,616	94,635	†20,000	383,547,399	1913	64.7
1914	12,826,579	265,762,535	39,849	214,895	67,020,522	†5,033,350	2,738,378	†995,764	7,409,792	‡11,834,802	1,917,802	26,235,403	275,500	643,533	777,038	†20,000	403,745,342	1914	65.8
1915	12,029,913	281,104,104	43,898	215,464	68,548,062	4,158,899	3,118,464	†995,764	8,202,674	‡12,386,800	2,487,251	32,910,508	516,120	†750,000	262,208	†10,000	427,740,129	1915	65.7
1916	¶10,298,208	300,767,158	50,585	198,123	¶72,801,110	6,461,706	2,997,178	†995,764	8,491,137	‡13,174,399	2,550,645	40,545,712	796,920	928,581	411,000	†25,000	461,493,226	1916	65.2
1917	¶2,681,870	335,315,601	†50,334	205,332	†69,000,000	¶5,965,447	2,898,654	†995,764	8,078,843	‡12,928,955	2,533,417	55,292,770	1,144,737	1,599,455	1,008,750	§7,004,973	506,702,902	1917	66.2
1918	8,730,235	355,927,716	35,953	204,741	40,456,182	5,591,620	2,449,069	711,260	8,000,000	13,284,936	2,536,102	63,828,327	1,321,315	2,082,068	2,079,750	§7,390,080	514,729,354	1918	69.1
1919	6,614,000	377,719,000	35,000	241,000	25,495,000	6,054,000	2,175,000	234,000	8,735,000	15,428,000	2,616,000	87,073,000	1,183,000	1,841,000	1,301,100	750,000	544,885,000	1919	62 0
1920	7,435,344	443,402,000	34,180	196,937	25,429,600	5,606,116	2,139,777	212,046	7,500,000	17,529,210	2,816,649	163,540,000	1,665,989	2,083,027	1,042,000	14,221,125	694,854,000	1920	63.8
1921	8,368,000	472,183,000	34,400	190,338	29,150,000	5,167,000	2,447,000	200,000	8,000,000	16,958,105	3,699,280	193,397,587	1,747,410	2,354,000	1,255,000	19,913,880	765,065,000	1921	61.7
1922	9,843,000	557,531,000	31,000	179,880	32,960,000	.....	2,042,000	319,000	7,790,000	16,720,000	5,314,000	182,278,000	3,018,000	2,445,000	1,188,000	33,235,000	854,809,000	1922	65.2
Total	183,672,000	6,459,562,000	**	25,232,000	1,966,137,000	.....	47,299,000	17,639,000	139,158,000	253,262,000	38,810,000	912,199,000	11,990,000	16,156,000	9,407,000	110,807,000	10,366,806,000		

NOTE—Survey carries totals in round numbers, as above.
**1,117,822. *Quantity marketed. †Estimated. ‡Includes British Borneo. §Estimated in part. ¶Includes Cuba, 19,167; Venezuela, 127,743; Persia, 6,856,063. ||Includes Persia, 21,909,000; Venezuela, 2,201,000; British Borneo, 2,849,000; France, 496,000; Algeria, 9000; and England, 1000. Figures from United States Geological Survey, Department of Interior.



Patented

HERE IS THE STRAINER

that is a mark of distinction and wise choice to use.

It has eliminated sand and cleaning out troubles.

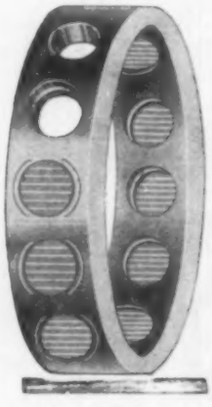
The complete satisfaction it has given users all over the world for many years is the reason there is far more of it used than any other.

We can solve sand and cleaning out troubles of any nature, therefore get in touch with us and use

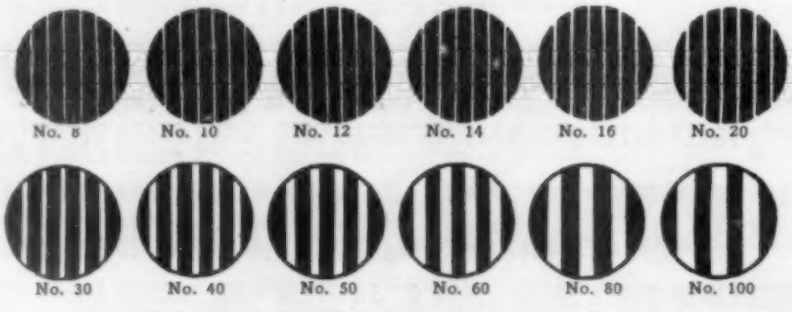
Patented

McEVOY WIRELESS WELL STRAINER

—Standard equipment for many of the largest Oil Producing Companies of the World.



Unretouched Photograph showing SOLID CONSTRUCTION of "McEVOY WIRELESS". It is indestructible and can be ROTATED, DRIVEN and PULLED like blank pipe. You can put on bit and drill in, as has been done many times before.



Actual sizes of Wrought Brass Strainer Plugs.
Numbers indicate widths of slots in thousandths of an inch.

CONSTRUCTION

Each Brass Strainer Plug is forced under heavy pressure down to THAT SHOULDER (SEE THAT SHOULDER?) and then RIVETED firmly within the wall of the pipe.

J. H. McEVOY & COMPANY

HOUSTON, TEXAS

Petroleum Marketed in the United States, 1859-1923, in Barrels of 42 Gallons

(OIL BURNED ON LEASE NOT INCLUDED)

Year	Pennsylvania and New York	Ohio	West Virginia	California	Kentucky and Tennessee	Colorado	Indiana	Illinois	Kansas	Texas	Missouri	Oklahoma	Wyoming (Includes Montana	Louisiana	United States	Total Value	Year
1859	2,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000	$ 32,000	1859
1860	500,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500,000	4,800,000	1860
1861	2,113,609	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,113,609	1,035,668	1861
1862	3,056,690	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,056,690	3,209,525	1862
1863	2,611,309	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,611,309	8,225,663	1863
1864	2,116,109	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,116,109	20,896,576	1864
1865	2,497,700	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,497,700	16,459,853	1865
1866	3,597,700	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,597,700	30,455,398	1866
1867	3,347,300	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,347,300	8,066,993	1867
1868	3,646,117	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,646,117	13,217,174	1868
1869	4,215,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,215,000	23,730,450	1869
1870	5,260,745	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,260,745	20,503,754	1870
1871	5,205,234	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,205,234	22,591,180	1871
1872	6,293,194	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,293,194	21,440,503	1872
1873	9,893,786	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,083,786	18,100,464	1873
1874	10,976,945	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,926,945	12,647,527	1874
1875	8,787,514	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,787,514	7,368,133	1875
1876	8,968,906	31,763	120,000	12,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,132,669	22,982,822	1876
1877	13,135,475	29,888	172,000	13,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13,350,363	31,788,566	1877
1878	15,163,462	38,179	180,000	15,227	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,396,868	18,044,620	1878
1879	19,685,176	29,112	180,000	19,858	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,914,146	17,210,708	1879
1880	26,027,631	38,940	179,000	40,552	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26,286,123	24,600,638	1880
1881	27,376,509	33,867	151,000	99,862	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,661,238	25,448,339	1881
1882	30,053,500	39,761	128,000	128,636	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30,349,897	23,631,165	1882
1883	23,128,389	47,632	126,000	142,857	4,755	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,449,663	25,790,252	1883
1884	23,772,209	90 081	90,000	262,000	4,148	.....	.....	.....	.....	.....	.....	.....	.....	.....	24,218,438	20,595,966	1884
1885	20,776,041	661,580	91,000	325,000	5,164	.....	.....	.....	.....	.....	.....	.....	.....	.....	21,858,785	19,198,243	1885
1886	25,798,000	1,782,970	102,000	377,145	4,726	.....	.....	.....	.....	.....	.....	.....	.....	.....	28,064,841	19,996,313	1886
1887	22,356,193	5,022,632	145,000	678,572	4,791	76,295	.....	.....	.....	.....	.....	.....	.....	.....	28,283,483	18,877,094	1887
1888	16,488,668	10,010,868	119,448	690,333	5,096	297,612	.....	.....	.....	.....	.....	.....	.....	.....	27,612,025	17,947,620	1888
1889	21,487,435	12,471,466	544,113	303,220	5,400	316 476	33,375	1,460	500	48	20	.....	.....	.....	35,163,513	26,963,340	1889
1890	28,458,208	16,124,656	492,578	307,360	6,000	368,842	63,496	900	1,200	54	278	.....	.....	.....	45,823,572	35,365,105	1890
1891	33,009,236	17,740,301	2,406,218	323,600	9,000	655,482	136,634	675	1,400	54	25	30	.....	.....	54,292,655	30,529,553	1891
1892	28,472,377	16,362,921	3,810,086	385,049	6,500	824,000	136,634	521	5,000	45	10	80	.....	.....	50,514,657	25,906,463	1892
1893	20,314,513	16,249,769	8,445,412	470,179	3,000	594,390	2,335,293	400	18,000	50	50	10	.....	.....	48,431,066	28,950,326	1893
1894	19,019,990	16,792,154	8,577,624	705,969	1,500	515,746	3,688,666	300	40,000	60	8	130	2,369	.....	49,344,516	35,522,095	1894
1895	19,144,390	19,545,233	8,120,125	1,208,482	1,500	438,232	4,386,132	200	44,430	50	10	37	3,455	.....	52,892,276	57,632,296	1895
1896	20,584,421	23,941,169	10,019,770	1,252,777	1,680	361,450	4,680,732	250	113,571	1,450	43	170	2,878	.....	60,960,361	58,518,709	1896
1897	19,262,066	21,560,515	13,090,045	1,903,411	322	384,934	4,122,356	300	81,098	65,975	19	625	3,650	.....	60,475,516	40,874,072	1897
1898	15,948,464	18,738,708	13,615,101	2,257,207	5,568	444,383	3,730,907	360	71,980	546,070	10	.....	5,475	.....	55,364,233	44,193,359	1898
1899	14,374,512	21,142,108	13,910,630	2,642,095	18,280	390,278	3,848,182	360	69,700	669,013	132	.....	5,560	.....	57,070,850	64,603 904	1899
1900	14,559,127	22,362,730	16,195,675	4,324,484	62,259	317,385	4,874,392	200	74,714	836,039	[1]1,602	6,472	5,450	.....	63,620,529	75,989,313	1900
1901	13,831,996	21,648,083	14,177,126	8,786,330	137,259	460,520	5,757 086	250	179,151	4,393,658	[2]2,335	10,000	5,400	.....	69,389,194	66,417,335	1901
1902	13,183,610	21,014,231	13,513,345	13,984,268	185,331	396,901	7,480,896	200	331,749	18,083,658	[2]757	37,100	6,253	548,617	88,766,916	71,178,910	1902
1903	12,518,134	20,480,286	12,899,395	24,382,372	554,286	483,925	9,186,411	.....	932,214	17,955,572	[3]3,000	138,911	8,960	917,771	100,461,337	94,694,050	1903
1904	12,239,026	18,876,631	12,644,686	29,649,434	998,284	501,763	11,339,124	.....	4,250,779	22,241,413	[2],572	1,366,748	11,542	2,958,958	117,080,960	101,175,455	1904
1905	11,554,777	16,346,660	11,578,110	33,427,473	1,217,337	376,238	10,964,247	181,084	[2]12,013,495	28,136,189	[3],100	([4])	8,454	8,910,416	134,717,580	34,157,399	1905
1906	11,500,410	14,787,763	10,120,935	33,098,598	1,213,548	327,582	7 673,477	4,397,050	[2]21,718,648	12,567,897	[3],500	([4])	[4]7,000	9,077,528	126,493,936	92,444,735	1906
1907	11,211,606	12,207,448	9,095,296	39,748,375	820,844	331 851	5,128,037	24,281,973	2,409,521	12,327,696	[4]4,000	43,524,128	[4]9,339	5,000,221	166,095,335	120,106,749	1907
1908	10,584,453	10,858,797	9,523,176	44,854,737	[4]727,767	379,653	3,283,629	33,686,238	1,801,781	11,206,464	[2]15,246	45,798,765	[5]17,775	5,788,874	178,527,355	129,079,184	1908
1909	10,434,300	10,632,793	10,745,092	55,471,601	[4]639,016	310 861	2,296,086	30,898,339	1,263,764	9,534,467	[2]5,750	47,859,718	[6]20,056	3,089,531	181,170 874	128 139 487	1909
1910	9,848,500	9,916,370	11,753,071	73,010,560	[4]468,774	239,794	2,159,725	33,143,362	1,128,668	8,899,265	[2]3,615	52,028,718	[5]115.430	6,841,395	209,557,248	127,899,688	1910
1911	9,200,673	8,817,112	9,795,464	81,134,391	[4]472,458	226,926	1,695,289	31,317,038	1,278,819	9,526,474	[2]7,995	56,069,637	[6]186,695	10,720,420	220,449,391	134,044 752	1911
1912	8,712,076	[3]8,969,007	12,128,962	[3]87,272,593	[4]848,368	206,052	970,009	28 601,308	1,592,796	11,735,057	([4])	51,427,071	1,572,306	9,263,439	222,935,044	164,213,247	1912
1913	8,865,493	8,781,468	11,567,299	97,788,525	[4]524,568	188.568	956,095	23,893,899	2,375,029	15,009,478	[2]10,843	63,579,384	2,406,532	12,498,828	248,446,230	237,121,388	1913
1914	9,109,309	8,536,352	9,680,033	99,775,327	[4]502,441	222,773	1,335,456	21,919,749	3,103,585	20,068,184	[2]7,792	73,631,724	3,560,375	14,309,435	265,762,535	214,125,215	1914
1915	8,726,483	7,825,326	9,264,798	86,591,535	[4]437,274	208,475	875,758	19,041,695	2,823,487	24,942,701	[2]14,265	97,915,243	4,245,525	18,191,539	281,104,104	179,462,890	1915
1916	8,466,481	7,744,511	8,731,184	90,951,936	1,203 246	197,235	769,036	17,714,235	8,738,077	27,644,605	.....	107,071,715	6.234,137	15,248,138	300,767,158	330,899,868	1916
1917	8,612,885	7,750,540	8,379,285	93,877,549	3,100,356	121,231	759,432	15,776,860	36,536,125	32,413,287	.....	107,507,471	8,978,680	11,392,201	[3]335,315,601	522,635.213	1917
1918	8,216,655	7,285,005	7,866,628	97,531,997	4,376,342	143,286	877,558	13,365,974	45,451,017	38,750,031	.....	103,347,070	12,596,287	16,042,600	[3]355,927,716	703,943,961	1918
1919	9,441,936	8,243,592	9,032,688	101,221,784	5,027,904	241,680	929,780	12,436,000	34,769,100	85,312,000	.....	131,127,900	13,342,320	16,250,000	377,719,000	867,753,379	1919
1920	8,360,400	7,412,000	8,173,050	105,668,000	8,692,600	110,000	932,000	10,772,000	38,500,000	96,000,000	.....	105,725,000	17,407,000	35,649,000	443,402,000	1,360,000,000	1920
1921	8,414,000	7,333,000	8,003,000	114,709,000	8,963,000	108,200	1,163,000	10,044,000	36,232,000	103,322,000	.....	113,978,000	20,656,800	26,523,000	469,639,000	753,000,000	1921
1922	8,505,000	6,775,000	7,015,000	138,907,000	9,603,000	96,500	1,089,000	9,409,000	31,891,000	117,106,545	.....	147,414,000	29,177,265	33,889,480	556,207,725	.....	1922
1923	8,590,000	7,123,000	6,452,000	258,387,119	8,110,140	95,500	1,049,000	8,724,000	29,406,925	125,991,628	.....	155,573,392	48,258,170	22,812,685	725,057,305	.....	1923
Total	831,514,053	500,253,978	333,150,398	1,829,119,479	58,599,832	11,971,250	111,268,364	349,610,380	419,521,323	751.960,128	86,977	1,475,138,749	168,861,128	285,894,076	7,280,596,749	.....	

Arkansas 1921 10,190,000
Arkansas 1922 15,869,635
Arkansas 1923 44,488,746
Total 70,548,381

[1]Includes Alaska, Michigan and Missouri production, estimated at 10,300 barrels in 1917 and 7,943 barrels in 1918. [2]Includes production of Michigan. [3]Includes production of Oklahoma. [4]Included with Kansas. [5]Estimated. [6]Includes production of Utah. [7]No. production in Tennessee recorded. [8]Includes small production in Alaska. [9]No production in Missouri; Michigan included in Ohio. [10]Includes production of Alaska, Michigan and New Mexico. [11]Includes production of Alaska and Michigan.

REPUBLIC SUPPLY CO.

ASSURED ECONOMY THROUGH QUALITY

RSCO

Republic Iron & Steel Co.'s Tubing, Casing, Line Drive and Line Pipe

Standard Seamless Tube Co.'s Seamless Upset Rotary Drill Pipe

American Well & Prospecting Co.'s "Gumbo Buster" Rotary Equipment

American Steel & Wire Co. and Broderic & Bascom Wire Rope

OIL FIELD SUPPLIES AND COMPLETE FIELD EQUIPMENT

District Headquarters
HOUSTON, TEXAS
Corsicana, Texas (Mildred)

District Headquarters
SHREVEPORT, LA.
Haynesville, La.
El Dorado, Ark.
Smackover, Ark.

District Headquarters
WICHITA FALLS, TEX.
Graham, Texas
Breckenridge, Texas
Electra, Texas
Burkburnett, Texas
Wilson, Okla.
Duncan, Okla.
Wirt, Okla.

District Headquarters
TULSA, OKLAHOMA
Tonkawa, Okla.
Henryetta, Okla.
Yale, Okla.
Shidler, Okla.
Pawhuska, Okla.
Haskell, Okla.
Beggs, Okla.
Slick, Okla.
Bristow, Okla.
Wewoka, Okla.

ROTARY OR CABLE

Say you saw it in The Oil Weekly

Production of Texas by Fields

From 1895 to January 1, 1924

Year	Corsicana	Powell	Petrolia	Marion County	Wichita and Wilbarger Counties	Moran	Strawn	Coleman County	Eastland County	Stephens County	Desdemona	Brown County	Thrall	Miscellaneous
1895	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1896	1,450	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1897	65,975	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1898	544,620	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1899	668,483	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1900	829,560	5,479	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1901	763,424	37,121	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	401,817	100,143	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	571,079	46,812	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	374,318	129,329	65,455	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1905	312,595	131,051	101,651	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1906	336,387	675,842	111,072	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1907	276,311	596,897	83,260	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1908	211,117	398,649	82,639	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,525
1909	180,764	383,137	113,485	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,554
1910	137,331	450,188	126,531	251,717	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,656
1911	128,526	373,055	168,965	677,689	899,579	.....	.....	.....	.....	.....	.....	.....	.....	3,379
1912	233,282	251,240	197,421	362,870	4,227,104	.....	.....	.....	.....	.....	.....	.....	.....	4,062
1913	158,830	283,476	344,868	262,392	8,131,624	.....	.....	.....	.....	.....	.....	.....	.....	7,074
1914	133,811	282,279	550,585	180,584	8,227,951	68,191	.....	.....	.....	.....	.....	.....	.....	12,900
1915	143,275	237,410	349,857	123,464	5,833,386	109,116	50,498	.....	.....	.....	.....	.....	613,182	4,061
1916	135,263	215,729	302,145	64,971	7,837,386	135,608	175,147	.....	.....	.....	.....	.....	432,695	32,140
1917	131,828	196,855	282,420	57,952	9,541,636	68,118	340,950	.....	93,053	36,219	.....	6,040	176,887	117,220
1918	*361,980	.....	297,320	.....	12,159,032	54,900	185,520	31,253	3,107,120	790,243	.....	451,002	12,000	e130,000
1919	*150,000	.....	212,624	**	30,279,108	32,500	101,300	46,590	22,379,665	10,514,216	7,375,825	213,256	8,200	235,075
1920	530,000	.....	135,385	.....	32,895,485	48,575	512,260	83,785	10,141,385	23,852,050	5,097,745	114,665	8,000	e25,000
1921	305,335	.....	132,295	.....	24,184,955	50,455	262,055	66,190	5,887,420	31,037,710	2,467,115	122,475	73,280	e24,000
1922	245,705	.....	121,295	.....	19,030,508	308,545	602,180	34,915	4,787,315	14,924,980	3,488,755	224,980	51,100	†31,010
1923	* §	.....	164,635	.....	18,823,394	1,426,180	402,920	48,465	3,764,085	10,062,055	2,761,735	222,655	34,210	92,796
T't'l's	§§	4,794,692	3,943,866	1,981,639	182,071,148	2,302,188	2,632,830	311,199	50,160,043	91,217,473	21,191,175	1,355,073	409,554	728,452

	1920	1921	1922	1923	Total
Mexia-Currie	.....	4,716,805	35,120,405	20,085,395	59,922,605
Young County	134,895	2,820,080	3,723,305	2,351,080	9,029,360
Archer County	49,850	422,205	849,680	5,088,630	6,410,365
Rockdale	.....	.....	93,600	230,462	324,062
Laredo Dist. (Mirando)	.....	.....	765,000	1,591,745	2,356,745
Luling	.....	.....	.....	958,055	958,055

*—Includes Powell. **Figures not obtainable. e—Estimated. †Mitchell County Production. §—32,361,150. §§—40,694,216.

Year	Spindle Top	Sour Lake	Batson	Saratoga	Humble	Goose Creek	Orange County	Matagorda County	Damon Mound	Hull	Barbers Hill	West Columbia	Dayton	Blue Ridge and Other Pools	San Antonio District and Somerset
1901	3,593,113	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1902	17,420,949	44,338	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1903	8,600,905	8,848,159	4,518	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1904	3,433,842	6,442,357	10,904,737	739,239	.....	.....	.....	151,936	.....	.....	.....	.....	60,294	.....	.....
1905	1,600,379	3,369,012	3,790,629	2,922,215	18,066,428	.....	.....	46,470	.....	.....	.....	.....	192,460	.....	.....
1906	1,075,755	2,156,010	2,388,238	2,289,057	3,570,845	.....	.....	8,000	.....	.....	.....	.....	120,036	.....	.....
1907	1,613,513	2,354,997	2,166,554	2,198,585	2,930,842	.....	.....	4,500	.....	.....	.....	.....	39,901	31,185	.....
1908	1,747,537	1,595,060	1,593,570	1,634,786	3,778,521	.....	.....	62,640	.....	.....	.....	.....	17,647	87,039	.....
1909	1,388,170	1,703,798	1,206,214	1,183,559	3,237,060	.....	.....	29,103	.....	.....	.....	.....	9,582	129,497	.....
1910	1,182,436	1,518,723	1,113,767	1,024,348	2,495,511	.....	.....	455,999	.....	.....	.....	.....	4,344	2,800	.....
1911	965,939	1,364,880	1,023,493	925,777	2,426,220	.....	.....	561,828	.....	.....	.....	.....	12,151	1,044	.....
1912	822,916	1,175,108	844,563	1,116,655	1,829,923	43,808	.....	300,000e	.....	.....	.....	.....	13,329	1,620	.....
1913	716,374	1,348,053	741,350	937,720	1,504,880	249,641	17,706	294,553	.....	.....	.....	.....	18,791	1,780	.....
1914	580,130	5,209,208	775,804	889,743	2,799,458	134,748	43,208	164,192	.....	.....	.....	.....	10,378	47,254	.....
1915	388,266	4,114,622	703,686	864,266	11,061,802	119,336	21,697	137,481	.....	.....	.....	.....	8,571	43,921	.....
1916	340,441	4,923,332	744,915	781,128	10,925,805	397,291	17,758	158,336	.....	.....	.....	.....	9,995	159,245	.....
1917	308,039	4,763,004	692,417	682,797	7,389,831	7,300,279	7,023	128,011	.....	.....	.....	.....	7,442	40,000	58,400
1918	502,265	3,115,033	654,950	790,740	5,645,104	9,419,132	3,425	99,540	486,640	330,300	20,000	136,350	1,000	24,910	94,100
1919	458,680	2,740,142	502,200	616,110	3,270,617	7,288,716	4,400e	53,260	434,700	1,476,405	169,415	8,128,809	1,000	*173,085	245,135
1920	323,995	2,073,485	484,035	913,735	3,692,115	5,666,390	4,000	75,775	1,259,375	4,468,615	136,375	10,563,150	1,000	*461,035	482,340
1921	321,080	1,749,625	516,225	936,695	3,098,500	5,647,020	704,370	89,405	1,353,960	8,717,970	49,885	12,573,450	30,410	*415,560	955,510
1922	295,015	1,737,685	430,265	661,870	2,552,940	5,248,065	**	34,730	945,410	6,819,135	236,185	11,631,750	38,925	332,445	§
1923	309,315	2,091,961	391,857	700,661	2,449,744	6,251,761	***	39,290	822,355	7,732,139	172,660	6,598,589	74,983		
Total	47,988,974	64,438,592	31,673,987	23,808,686	92,728,146	47,766,087	****	2,895,049	5,302,440	29,544,564	784,520	49,632,098	671,239	1,952,420	§§

	1920	1921	1922	1923	Total
Pierce Junction	.....	1,403,940	1,145,225	322,565	2,871,730
Nacogdoches	75,000	103,035	58,875	39,145	276,055

*Blue Ridge only. **5,492,345. ***5,311,995. ****10,804,340. §—1,335,499. §§—3,170,984. e—Estimated.

Coal Seekers Found Gas in Texas in 1885

Fort Worth, Texas, Jan. 14.—The discovery of gas in Texas has probably been antedated by information gained recently by B. F. Thompson of the geological staff of the Gulf Production Company while doing work in Presidio County in west Texas and adjacent the Mexican border, as a 1100-foot core test for coal has been located in this county that was drilled in 1885. This test was sunk for the Tennessee Coal & Iron Company by Detweiler and others, on land now known as the Toole Estate in section 18, Cynthia A. Price survey, block G-25, and an old log recently obtained shows a number of showings of gas. Only meager traces of the location of the test now exist, but on the strength of its showing a nearby offset has been started by Claude Byler and others. The first oil discovered in Texas was in Nacogdoches County in 1866, while the first field developed in the state was at Corsicana in the fall of 1894.

Denver, Colo., Jan. 5.—General offices of Producers and Refiners Corporation will be brought back to Denver from Chicago, where the main offices of the company have been located for some time. Only a sales office will be maintained hereafter in Chicago.

On the Job 24 Hours a Day — On the Job 24 Hours a Day

We Help Turn Minutes Into Dollars

Some of Our Special Tools

Adapters
Forged Steel Bushings
Traveling Blocks
Tubing Blocks
Crown Blocks
Bailers
Fish Tail Bits
Packing Clamps
Anchor Clamps
Casing Clamps
Die Collars
Die Nipples
Drill Collars
Forged Steel Crosses
Forged Steel Tees
Packing Heads
Hosmer Quick Acting Tubing Heads
Tong Line Hangers
Safety Joints
Rotary Tool Joints
Liner Setting Tools
Cox & Delaney Line Shaft Spools
Drilling Nipples
Flow Nipples
Swedge Nipples
Baash-Ross Overshots
Winger Overshots (Improved Packed)
Hosmer Blow Out Preventers
Bull Plugs
Pump Parts
Casing Shoes (Solid punched only)
Rotary Shoes
H & W Rotary Drill Pipe Stops
Washdown Spears
Rotary Swivels
Rotary Machines
Rotary Draw Works
Rotary Underreamers
Fishing Taps

Years ago when this firm began business, it adopted as its motto, "Real Service 24 Hours a Day."

It has consistently lived up to this motto since, and attributes its growth and success to the working out of this principle.

Why should we close down 12 to 16 hours daily when our customers in the oil fields work day and night and holidays?

To the oil operator, the midnight hour is just as important as the midday hour.

Every minute, in fact, is important in handling "black gold." That is one reason why practically every tool we make is a TIME saver. They save by actually speeding drilling or pumping and by preventing shut-downs through their sturdy effective construction.

Our special free trial offer will interest you. Write for it.

Distinctively Service

Affiliated with the Baash-Ross Tool Company is the L. F. Baash Perforating Co. of the same address.

This concern is strictly a service company. It does not make tools, and sells nothing but its service.

It owns and operates two important tools on a service basis: The Kammerer Drill Pipe Cutter and the Baash Perforator. It also has at its command—and yours—a full line of drilling and fishing tools.

The Kammerer Drill Pipe Cutter will pull you out of many a tight hole when nothing else will.

The perforator will cut slots in your casing at any desired point or points without making it necessary to pull your casing, and reset.

Details concerning this service given promptly day or night.

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5512 Boyle Ave.
P. O. Box 1110 Arcade Station
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Phone Humbolt 3933

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Total Production of Crude Oil in California

From the Beginning of the Industry to January 1, 1924, by Fields—in Barrels (42 U. S. Gallons)

Note.—The production figures in the tabulation below give the crude oil production of each field for each year since the beginning of the industry in the State. It is a history in figures of California's crude oil production and field development

Year	Kern River	McKittrick	Midway	Sunset	Coalinga	Santa Maria-Lompoc	Summerland	Newhall and Ventura Co.	Los Angeles and Salt Lake	Whittier-Fullerton	Lost Hills-Belridge	Miscellaneous	Total
Prior	.....	.....	.....	.....	.....	.....	.....	175,000	.....	.....	.....	.....	175,000
1876							.....	12,000	.....	.....	.....	.....	12,000
77							.....	13,000	.....	.....	.....	.....	13,000
78							.....	15,227	.....	.....	.....	.....	15,227
79							.....	19,858	.....	.....	.....	.....	19,858
1880							.....	40,552	.....	.....	.....	.....	40,552
81							.....	99,862	.....	.....	.....	.....	99,862
82							.....	128,636	.....	.....	.....	.....	128,636
83							.....	142,857	.....	.....	.....	.....	142,857
84							.....	262,000	.....	.....	.....	.....	262,000
85							.....	325,000	.....	.....	.....	.....	325,000
86							.....	377,145	.....	.....	.....	.....	377,145
87							.....	678,572	.....	.....	.....	.....	678,572
88							.....	690,333	.....	.....	.....	.....	690,333
89	.....	.....	.....	.....	.....	.....	.....	303,220	.....	.....	.....	.....	303,220
1890	.....	.....	.....	.....	•	.....	•	307,360	.....	.....	.....	.....	307,360
91	.....	.....	.....	•	.....	.....	.....	323,600	.....	.....	.....	.....	323,600
92	.....	•	.....	.....	.....	.....	.....	385,049	.....	.....	.....	.....	385,049
93	.....	.....	.....	.....	.....	.....	.....	470,179	.....	.....	.....	.....	470,179
94	.....	.....	.....	.....	.....	.....	1,500	524,469	257,109	.....	.....	.....	783,078
95	.....	.....	.....	.....	.....	.....	16,904	476,490	751,945	.....	.....	.....	1,245,339
96	.....	.....	.....	.....	14,119	.....	39,792	298,866	905,003	.....	.....	.....	1,257,780
97	.....	.....	.....	.....	70,140	.....	130,136	368,282	1,327,011	12,000	.....	4,000	1,911,569
98	.....	10,000	.....	.....	154,000	.....	132,217	427,000	1,462,871	60,000	.....	3,000	2,249,088
99	•	15,090	.....	.....	439,372	.....	208,370	496,200	1,409,356	108,077	.....	1,500	2,677,875
1900	826,775	80,000	•	12,500	547,960	.....	183,486	443,000	1,722,887	254,397	.....	248,945	4,319,950
01	3,278,840	430,450	4,235	188,600	525,433	•	203,616	472,057	2,304,432	302,652	.....	.....	7,710,315
02	8,988,046	619,296	3,044	162,558	571,233	86,888	143,552	475,000	2,198,496	1,103,793	.....	.....	14,356,910
03	16,342,099	1,353,206	27,305	352,565	2,138,058	204,890	131,125	682,185	793,765	2,305,613	.....	3,670	24,334,481
04	17,226,240	1,856,225	910	390,425	5,097,853	700,450	120,506	650,779	1,241,304	2,224,550	.....	39,392	29,548,634
05	15,253,845	1,373,030	18,530	419,212	8,882,125	3,402,800	96,871	476,898	2,226,768	2,118,312	.....	29,650	34,298,041
06	12,825,166	680,756	11,800	307,550	8,401,105	4,799,411	72,810	404,379	2,675,650	2,434,512	.....	10,090	32,623,229
07	12,346,014	2,415,840	149,944	704,805	8,996,268	8,249,236	69,060	435,584	3,372,465	3,294,206	.....	69,090	40,102,512
08	11,803,529	3,076,100	434,578	1,463,510	10,725,795	8,699,350	67,862	498,015	5,128,959	4,273,314	.....	125,475	48,306,737
09	14,508,242	5,807,360	2,234,455	1,999,701	15,406,619	8,017,455	66,338	516,628	4,350,898	5,157,252	.....	126,775	58,191,723
1910	14,776,435	5,471,613	11,174,207	9,218,904	18,646,570	7,607,830	74,725	652,575	3,729,618	6,281,221	4,900	58,970	77,697,568
11	14,078,890	5,477,532	21,584,602	5,559,069	18,311,251	7,465,074	71,255	661,785	3,223,661	7,081,165	168,410	61,350	83,744,044
12	12,446,445	5,094,465	25,918,980	5,590,824	19,546,122	6,801,946	65,715	859,885	3,073,427	7,919,779	2,680,961	45,870	90,074,439
13	9,980,940	4,496,842	33,040,129	5,984,651	18,604,626	5,817,711	62,406	1,022,052	2,898,846	10,657,053	5,274,553	27,375	97,867,184
14	7,010,545	3,520,857	37,479,228	12,546,615	15,925,887	4,303,080	55,743	968,421	2,594,475	14,130,548	4,830,921	27,375	103,623,695
15	8,034,974	3,552,801	33,311,486	6,006,607	13,548,159	4,536,840	53,000	1,036,305	2,110,133	13,030,549	4,318,550	27,375	89,566,779
16	8,402,525	3,230,644	32,156,818	6,768,658	14,381,493	4,422,410	56,775	1,122,033	1,721,453	14,679,672	4,852,431	27,450	91,822,362
17	6,495,610	3,252,544	29,487,812	7,072,333	15,938,543	5,769,070	56,570	1,186,407	1,501,799	18,155,440	6,295,329	27,375	97,267,832
18	7,921,515	3,050,627	27,439,995	6,606,940	16,283,066	7,143,750	54,613	1,386,518	1,397,781	24,903,613	5,420,079	27,375	101,637,870
19	7,563,025	2,810,848	26,414,067	5,589,885	16,185,610	6,030,916	53,680	1,792,463	1,341,415	28,657,683	4,554,821	27,375	101,221,784
1920	7,456,515	2,607,240	32,493,229	5,423,781	15,464,198	5,928,060	54,910	2,122,449	1,311,264	28,694,163	4,139,767	25,610	105,721,186
21	6,715,680	2,056,101	42,257,775	4,613,965	12,340,637	5,363,324	54,155	2,375,479	1,344,926	34,242,566	3,261,281	24,035	114,849,924
22	7,317,288	2,417,434	*29,694,842	.....	9,159,368	3,797,903	48,339	3,015,877	1,258,287	5,230,703	2,814,824	20,318	130,626,876
23	6,761,358	2,127,643	31,555,553	.....	5,198,812	2,969,074	52,702	3,711,183	1,193,678	4,659,374	1,844,780	145,819	258,387,119
Totals	242,380,593	67,474,945	416,923,526	86,990,658	271,704,422	112,353,782	2,491,733	35,601,488	58,638,423	242,789,428	50,461,607	1,256,245	1,852,795,373

	Kern River	Coalinga	Santa Maria-Lompoc
	1922	1923	Total
Santa Fe Springs	11,832,955	75,247,659	86,280,614
Coyote	7,000,373	2,431,363	9,431,736
Elk Hills	11,891,030	8,179,773	20,071,803
Huntington Beach	11,169,383	32,429,898	43,599,281
Long Beach	18,560,595	66,767,850	85,328,445
Montebello	6,692,024	4,106,401	10,798,425
Richfield	8,314,528	6,135,056	14,449,584
Compton	.....	157,962	157,962
Torrance	190,785	2,765,223	2,956,008

*Figures not available. **Includes Sunset field.

UNITED STATES FIELD STATISTICS FOR 1923

Recapitulation

State—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Annual Production 1923	Annual Production 1922
Arkansas	2,000	706	1,553	615	110	20	337	71	883,336	424,930	44,488,746	15,829,635
*California	1,109	...	845	...	...	...	264	..	1,291,900	...	258,387,119	130,626,876
Eastern States	7,279	9,047	4,552	6,142	1,208	1,268	1,519	1,637	86,965	111,034	40,048,140	41,846,300
Kansas	773	1,357	442	841	20	59	311	457	63,200	65,078	29,406,925	31,768,665
Louisiana	589	1,105	318	858	89	57	182	190	34,253	369,510	22,812,685	33,889,480
†Mountain States	...	...	...	...	...	...	...	...	...	...	48,348,670	29,177,265
Oklahoma	4,107	5,428	2,475	3,540	462	598	1,170	1,290	976,590	1,087,146	155,573,392	147,414,000
Texas	4,656	4,264	3,252	3,001	3	11	1,401	1,252	2,519,808	1,411,788	125,991,628	117,106,545
Total	20,513	21,907	13,407	14,997	1,892	2,013	5,184	4,897	5,920,019	3,469,486	725,057,305	547,658,766

*Statistics for California cover only 11 months with an estimated production for December.
†Drilling statistics for Montain States not available.

California

Field—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Yearly Production 1923	Yearly Production 1922
Coalinga	21	..	2	..	..	..	19	..	125	..	5,198,812	9,159,368
Compton	1	..	1	..	..	..	..	..	1,250	..	157,962	.....
Coyotte	8	..	5	..	..	..	3	..	720	..	2,431,363	7,000,373
Elk Hills	18	..	18	..	..	..	..	..	12,297	..	8,179,773	11,891,030
Fullerton	5	..	5	..	..	..	..	..	1,999	..	4,023,878	4,512,974
Huntington Beach	129	..	102	..	..	..	27	..	95,903	..	32,429,898	11,169,385
Kern River	...	..	...	..	..	..	...	..	...	..	6,761,358	7,317,288
Long Beach	295	..	226	..	..	..	69	..	429,170	..	66,767,850	18,560,595
Los Angeles—												
Salt Lake	..	..	..	..	..	..	..	..	...	..	1,193,678	1,258,287
Lost Hills—												
Bellridge	6	..	1	..	..	..	5	..	10	..	1,844,780	2,814,824
McKittrick	5	..	1	..	..	..	4	..	25	..	2,127,643	2,417,434
Midway-Sunset	156	..	132	..	..	..	24	..	33,088	..	31,555,553	29,694,842
Montbello	9	..	5	..	..	..	4	..	758	..	4,106,401	6,692,025
Richfield	15	..	10	..	..	..	5	..	2,653	..	6,135,056	8,314,528
Santa Fe Springs	291	..	249	..	..	..	42	..	665,811	..	75,247,659	11,032,955
Santa Maria	12	..	2	..	..	..	8	..	110	..	2,969,074	3,797,903
Summerland	..	..	..	..	..	..	..	..	...	..	52,702	48,339
Torrance	61	..	61	..	..	..	..	..	42,679	..	2,765,223	190,785
Ventura-Newhall	40	..	18	..	..	..	22	..	4,247	..	3,711,183	3,015,877
Watsonville	..	..	..	..	..	..	..	..	...	..	21,001	20,338
Wheeler Ridge	5	..	5	..	..	..	..	..	1,040	..	124,818	.....
Whittier	2	..	2	..	..	..	..	..	15	..	635,496	717,729
Wild Cats	13	..	..	..	..	..	31	..	...	..	.....	.....
Total	1,109	..	845	..	..	..	264	..	1,291,900	..	258,387,119	130,626,876

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Eastern States

States—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Well 1923	Gas Well 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Monthly Production 1923	Monthly Production 1922
Illinois	266	396	150	307	21	9	95	80	4,748	11,139	8,724,000	9,409,000
Indiana	167	257	107	188	2	7	58	62	3,396	3,317	1,049,000	1,089,300
Maryland	27	...	19	...	1	..	7	..	1,305	.....	.....	.....
Mississippi	16	...	...	...	...	..	16	..	.....	.....	.....	.....
Kentucky	1863	2354	1341	1875	72	68	450	411	39,673	48,347	8,102,900	9,053,000
New York	168	171	159	140	4	12	5	19	927	1,176	1,219,000	1,010,000
Ohio	2091	2847	1311	1654	322	459	458	534	22,375	22,474	7,123,000	6,775,000
Pennsylvania	1218	1654	872	1218	199	250	147	186	7,484	16,404	7,371,000	7,495,000
Tennessee	55	52	19	33	...	..	36	19	839	99	7,240	.....
West Virginia	1407	1516	573	727	587	463	247	326	6,218	8,078	6,452,000	7,015,000
Virginia	1	...	1	...	...	..	...	...	.....	.....	.....	.....
Totals	7279	9047	4552	6142	120	1268	1519	1637	86,965	111,034	40,048,140	41,846,300

Louisiana

Field—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Annual Production 1923	Annual Production 1922
Anse La Butte	..	3	..	..	..	..	..	3	.....	.....	16,942	35,552
Bellevue	125	123	104	98	3	8	18	17	7,170	23,205	2,526,520	1,023,688
Bienville	2	..	..	..	..	..	2	..	.....	.....	.....	.....
Bossier Parish	4	..	2	..	1	..	1	..	.....	35	.....	352,530
Bull Bayou	10	15	4	10	6	..	..	5	275	950	2,134,591	2,499,456
Caddo	79	85	45	57	..	2	34	28	14,635	12,610	4,015,819	4,161,048
Cotton Valley	1	..	1	..	..	..	..	..	35	.....	.....	.....
De Soto Parish	2	..	..	..	1	..	1	..	.....	.....	.....	.....
Dolet Hills	5	..	3	..	1	..	1	..	165	.....	.....	.....
Edgerly	17	2	16	2	..	..	1	..	2,878	450	176,964	115,858
Elm Grove	17	19	7	14	6	4	4	1	273	805	469,863	186,560
Evangeline	11	5	7	3	..	..	4	2	1,105	155	212,376	181,879
Haynesville	42	683	37	637	..	..	5	46	3,255	328,185	7,364,888	20,602,710
Homer	1	3	1	1	..	..	..	2	55	55	3,760,292	6,005,908
Monroe	113	..	45	..	56	..	12	..	716	.....	.....	.....
Sarepta	2	..	1	..	1	..	..	..	50	.....	.....	.....
Vinton	44	30	38	26	..	..	6	4	3,495	3,095	2,134,430	1,436,700
Webster	11	..	6	..	5	..	..	..	114	.....	.....	.....
Wildcats	103	137	1	10	9	43	93	84	.....	.....	.....	.....
Totals	589	1,105	318	858	89	57	182	190	34,253	369,510	22,812,685	33,889,480

Arkansas

Field—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Annual Production 1923	Annual Production 1922
Calion	79	...	59	...	3	...	17	..	18,548	.....	2,411,593	141,885
El Dorado	60	533	30	480	...	4	30	49	4,700	104,660	4,754,170	11,833,915
Irma	16	...	7	...	2	...	7	..	835	.....	.....	.....
Smackover	1,541	153	1,254	129	102	16	185	8	847,861	319,760	35,628,218	3,923,725
Stephens Dist.	208	6	200	6	...	...	8	..	10,392	510	694,765	14,110
Wildcats	96	14	3	...	3	...	90	14	1,000	.....	.....	.....
Total	2,000	706	1,553	615	110	20	337	71*	883,336	424,930	44,488,746	15,829,635

Texas

Field—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Production 1923	Initial Production 1922	Monthly Production 1923	Monthly Production 1922
Barbers Hill	14	11	5	5	..	..	9	6	2,505	3,005	172,660	236,185
Batson	20	10	16	10	..	..	4	..	3,890	650	391,857	430,265
Big Creek	7	..	2	..	..	..	5	..	300	..	17,545	..
Big Hill	1	..	1	..	..	..	..	..	450	..	13,853	..
Blue Ridge	7	20	4	11	..	..	3	9	4,050	13,745	332,445	415,560
Brown County	46	32	24	12	..	..	22	11	617	785	222,655	224,980
Burkburnett	225	195	159	134	..	..	66	61	23,619	7,240	9,174,020	11,486,740
Carson County	..	..	..	..	..	..	..	..	..	..	7,595	..
Coleman County	7	4	3	1	1	..	3	3	25	75	48,465	34,915
Corsicana-Powell	646	..	590	..	..	..	56	..	1,965,185	..	32,361,150	245,705
Damond Mound	18	33	14	22	..	..	4	11	1,625	4,995	822,355	945,410
Dayton	1	4	1	..	..	..	..	4	15	..	74,983	38,925
Desdemona-Gorman	77	22	51	15	..	..	26	7	2,896	525	2,761,735	3,488,755
Electra	501	560	368	420	..	..	133	140	33,549	54,060	8,856,089	6,606,320
Goose Creek	75	65	64	54	..	..	11	11	15,560	30,990	6,251,761	5,248,065
High Island	1	..	1	..	..	..	..	..	1,000	..	19,018	..
Holliday-Archer	837	146	595	110	..	..	242	36	95,682	8,485	5,088,630	849,680
Hull	143	105	111	83	..	..	32	22	157,305	113,380	7,732,139	6,819,135
Humble	18	33	14	27	..	..	4	6	6,350	3,350	2,449,744	2,552,940
Iowa Park	50	17	17	11	..	..	33	6	861	395	313,790	253,590
Jack County	..	..	..	..	..	..	..	..	..	..	16,360	..
K-M-A	17	37	7	29	..	..	10	8	256	1,290	479,495	683,855
*Luling	..	..	..	..	..	..	..	..	..	..	958,055	..
Markham	..	..	..	..	..	..	..	..	..	..	39,290	..
Mexia-Currie-Richland	63	899	38	561	..	..	25	338	15,955	678,070	20,085,395	35,120,405
Mirando	95	56	93	56	..	..	2	..	18,050	10,000	1,591,745	765,780
Mitchell County	19	9	14	51	..	..	5	41	1,530	700	166,145	34,010
Moran-Schackelford	418	..	258	..	..	..	160	..	8,696	..	1,426,180	308,545
Nacogdoches	..	..	..	..	..	..	..	..	..	..	39,145	58,875
Orange	125	164	106	146	..	..	19	18	82,952	140,630	5,311,995	5,492,345
Petrolia-Clay	30	6	13	3	..	..	17	3	350	60	164,635	121,295
Pierce Junction	15	47	3	22	..	..	12	25	2,045	42,990	332,565	1,145,725
Ranger-Eastland	188	333	139	267	..	..	49	66	13,913	72,890	3,764,085	4,787,315
Reagan	..	..	..	..	..	..	..	..	..	..	18,425	..
Rockdale-Minerva	48	101	48	92	..	..	..	9	591	4,000	230,462	93,600
Saratoga	7	12	7	9	..	..	..	3	226	340	700,661	661,870
Somerset	82	177	82	177	..	..	..	..	713	2,130	1,335,499	955,510
Sour Lake	29	44	21	40	1	..	7	4	3,643	2,235	2,091,961	1,737,685
Spindle Top	16	16	13	12	..	..	3	4	438	272	309,315	295,015
Stephens County	222	374	162	287	..	..	60	87	42,040	74,800	10,062,055	14,924,980
Strawn-Palo Pinto	66	47	25	29	..	..	41	18	918	1,576	402,920	602,180
Thrall-Williamson	1	..	..	..	..	..	1	..	..	..	34,210	51,100
West Columbia	24	66	16	49	..	..	8	17	2,555	78,030	6,598,589	11,631,750
Young County	130	294	70	229	..	..	60	65	7,115	42,565	2,351,080	3,723,305
Wildcats	366	314	97	64	1	..	268	250	2,788	17,530	..	.
	4656	4253	3252	3001	3	..	1401	1252	2,519,808	1,411,788	125,991,628	117,106,545

*Full figures not available.

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PUMPING EQUIPMENT

Oklahoma

County—	Completions	Producers	Gas Wells	Failures	Initial Production
Beaver	1	..	..	1	.....
Beckham	13	1	4	8	3,600
Bryan	1	..	..	1	.....
Caddo	19	9	..	10	410
Carter	199	152	20	27	39,253
Comanche	4	1	2	1	60
Cotton	3	..	..	3	.....
Creek	699	426	50	223	136,729
Custer	2	..	..	2	.....
Garfield	67	41	1	20	3,004
Garvin	107	73	15	19	13,092
Grady	80	9	41	30	70
Grant	9	..	2	7	.....
Harmon	2	..	..	2	.....
Hughes	40	12	9	19	4,135
Jackson	1	..	..	1	.....
Jefferson	4	..	..	4	.....
Kay	405	318	33	54	313,701
Kiowa	3	..	..	3	.....
Lincoln	5	1	..	4	430
Love	5	..	..	5	.....
Marshall	3	..	..	3	.....
McIntosh	64	3	34	27	27
McClain	3	..	..	3	.....
McCurtain	1	..	..	1	.....
Murray	1	..	..	1	.....
Muskogee	70	17	10	43	575
Noble	272	246	7	19	156,382
Okfuskee	179	72	25	82	7,083
Okmulgee	405	196	53	156	17,399
Osage	804	588	59	157	242,405
Pawnee	159	88	27	35	6,766
Payne	43	16	9	18	842
Pontotoc	3	..	..	3	.....
Seminole	21	17	1	4	12,668
Sequoyah	3	..	1	2	.....
Stephens	179	72	35	72	5,696
Tillman	10	8	..	2	610
Tulsa	135	65	17	53	4,665
Waggoner	94	44	8	42	1,988
Washita	2	..	..	2	.....
Woodward	1	..	..	1	.....
Total	4,107	2,475	462	1,170	976,590

OKLAHOMA PRODUCTION, 1923, 1922

Field—	1923	1922
Tonkawa	28,033,318	2,481,980
Burbank	31,968,549	24,133,624
Osage (Outside of Burbank)	6,103,644	9,650,920
Cushing	9,883,253	10,189,672
Bristow	30,352,550	6,064,630
Lyons-Quinn	.....	3,830,360
Okmulgee	9,882,619	7,024,865
Okfuskee	3,630,230	.....
Hewitt	9,033,784	11,056,245
Wewoka	1,630,678	.....
Healdton	5,800,047	7,711,490
Duncan and Walters	3,651,855	5,898,505
Other Fields	25,602,865	59,373,709
Total	155,573,392	147,414,000

Kansas

County—	Completions 1923	Completions 1922	Producers 1923	Producers 1922	Gas Wells 1923	Gas Wells 1922	Failures 1923	Failures 1922	Initial Prod. 1923	Initial Prod. 1922
Barber	1	....	...	...	..	..	1	...	...	...
Barton	1	....	...	...	..	..	1	...	...	...
Butler	159	305	73	205	1	..	85	100	4,960	31,870
Chase	7	...	...	...	..	..	7	...	...	...
Clay	1	...	...	...	..	..	1	...	...	...
Coffey	10	5	...	...	..	..	5	...	135	...
Cowley	100	33	46	7	5	..	49	26	2,964	392
Elk	34	28	7	14	12	3	15	11	340	315
Greenwood	407	256	302	179	2	1	103	76	53,514	13,739
Harper	1	...	...	...	..	..	1	...	...	...
Harvey	2	...	1	...	..	..	1	...	200	...
Kingman	2	...	...	...	..	..	2	...	...	...
Lynch	1	...	1	...	..	..	...	...	30	...
Lyon	17	16	3	3	..	..	14	13	72	165
Marion	23	74	11	46	..	..	12	28	945	6,670
McPhearson	2	...	...	...	..	..	2	...	...	...
Morris	1	...	...	...	..	..	1	...	...	...
Osage	3	...	...	...	..	..	3	...	...	...
Reno	2	...	...	...	..	..	2	...	...	...
Sumner	5	...	...	...	..	..	5	...	...	...
Woodson	4	34	3	4	..	..	1	10	40	825
*Miscellaneous	...	611	...	363	..	55	...	193	...	11,086
Total	783	1,357	452	841	20	59	311	457	63,200	65,078

*No miscellaneous figures for 1923.

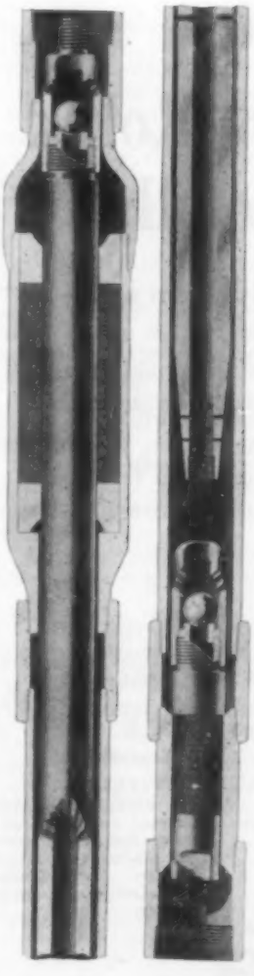
KANSAS MONTHLY PRODUCTION FOR 1923 AND 1922

Field—	1923	1922
Eldorado	6,683,552	7,745,843
Greenwood County	4,895,519	634,162
Elbing and Peabody	4,518,158	5,193,550
Fox-Bush	2,919,783	704,290
Florence and Covert	1,974,820	4,157,567
Blankenship	1,588,530	319,125
Augusta and Douglas	1,515,112	5,239,943
Leon and Webster	746,765	197,068
Other fields	4,564,686	7,577,117
Total	29,406,925	31,768,665

Announcing "TEX" Plunger Working Barrels

PATENTED

The real solution to your Working Barrel Problems



DURING the past fifty years, Working Barrels by the hundred have been designed. Some of them have reached the market, lived a short life of only comparative usefulness and then quickly discarded. Frequent pulling jobs have continued to be a menace to low cost of production—

THEN CAME THE "TEX" PLUNGER WORKING BARREL

Since its introduction it has more than surpassed expectations. Designed by a practical production man whose many years of experience taught him the needs of every oil man, the "TEX" today unquestionably is the solution to the pumpers' problems.

Many years experience and experimenting made possible the "TEX." Field tests under the hardest possible conditions have proven its worth.

- ¶ It has no cups to wear out—thus eliminating frequent pulling jobs.
- ¶ It can not stick in sand.
- ¶ It is easy to pull the lower valve, as a special attachment can be furnished for the purpose if desired.
- ¶ It automatically packs itself; there being no screw gland or spring—the weight of the oil automatically compresses the packing as required.
- ¶ Its capacity is large.
- ¶ It employs a reciprocating plunger through a special high quality packing that practically eliminates scoring of plunger.

The "TEX" will positively increase your production, lower your operating costs and eliminate your working barrel troubles.

Write for descriptive circular—or better yet, let us demonstrate its many good features on one of your leases. We'll be glad to abide by the result.

BRADFORD MOTOR WORKS

BRADFORD, PENNA.

BRANCH FACTORY AND WAREHOUSE—TULSA, OKLA.

Actual Photo Showing a Battery of Four 45 H. P. F. & T. Non-Code Boilers Being Operated by the Tidal Oil Company on Their Thompson Farm, Near Corsicana, Texas

Strength *vs* Price

Farrar & Trefts' Boiler Sheets are Rolled Diagonally Instead of Horizontally

Many years of service with a minimum of expense has always been a feature of F. & T. Steam Boilers.

Every part of Farrar & Trefts Boilers, from boiler sheets to the last rivet, is the best the market affords. Strength has never been sacrificed to lower their cost.

Their original cost is not low, but the strength of their construction, the quality of material used in them and the backing of 60 years of experience in the boiler making industry is a guarantee in itself that Farrar & Trefts Steam Boilers give the **greatest return for the money.**

Specifications and Full Information on Request

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Phone Osage 1929

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MACWHYTE WIRE LINES

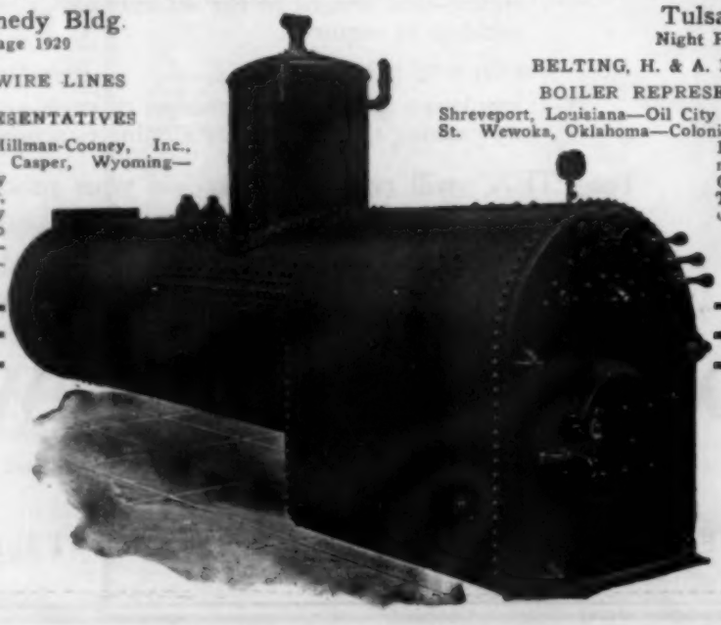
BELTING, H. & A. BULL ROPE

BOILER REPRESENTATIVES

Los Angeles, Calf.—Hillman-Cooney, Inc., 408-9 Higgins Bldg. Casper, Wyoming—Northwestern Supply Company. Beaumont, Texas—Brooks Supply Company. El Dorado and Smackover, Ark.—S. Bender Iron & Supply Company.

BOILER REPRESENTATIVES

Shreveport, Louisiana—Oil City Iron Works, 204 Strand St. Wewoka, Oklahoma—Colonial Supply Company. El Dorado, Kansas—El Dorado Machine & Tool Company. Fort Worth, Texas—Longhart Supply Company.



Say you saw it in The Oil Weekly

Drilling Costs Show Little Change in Year

Estimates of expense item in various fields at first of 1924 are itemized

WITH the return of better conditions in the industry reflected by the upward turn of the crude market during the first few weeks of 1924, much interest has been turned toward plans for spring and summer drilling campaigns. In an effort to find what effect the depressing situation of 1923 had had upon operating costs in the field, The OIL WEEKLY has again compiled figures showing drilling costs in various sections of the country.

Taken as a whole little change is shown in this expense item as compared with the early part of 1922, when the industry was just returning to normalcy after the disastrous season of 1921. In some cases, however, a decided change is shown in present costs as compared with the 1922 figures.

In Oklahoma, where drilling costs were rather high during 1921 and 1922 as a result of the active drilling centers being removed to some extent from the source of supply, this item has been materially reduced. In the Burbank pool, for example, a well can be drilled now for approximately $4,000 less than two years ago.

Despite the activity in California fields during the past year little fluctuation is shown in drilling costs there as a result of the state regulations which have caused these figures to be maintained at a high level for several years.

Due to the ever shifting drilling sites as the results of the old fields playing out and new fields coming in, it is almost impossible to make accurate comparisons over a period of several years.

Following are estimates of drilling costs in the principal producing sections of the country at present:

Mountain States

SALT CREEK FIELD

(2640 Foot Test)

The cost of drilling a well to the pay sand in the Salt Creek field of Wyoming is itemized as follows:

Drilling contract 2637 ft at $3.50 per foot	$10,550.00
Teaming materials to location	1,099.62
Trucking and Freight	186.25
Miscellaneous equipment	544.06
112 ft. 12½-in casing	226.24
1615 ft. 10-in casing	2,849.55
2404 ft. 8¼-in casing	3,485.80
2621 ft. 6⅝-in casing	3,223.83
Labor	1,061.04
Fuel	809.93
Water,	505.00
Initial shot	264.60
Allowance for unforeseen accidents	1,000.00
Grand total	25,805.92
Salvage if an oil well	2,306.84
Net cost of oil well	23,499.08
Additional salvage if dry hole	4,404.62
Net costof dry hole	19,094.46

Oklahoma

OKMULGEE COUNTY

(3300 Foot Well to Wilcox Sand)

Standard rig, complete	$2,800.00
Repairs to rig while drilling	300.00
Drilling contract @ $2.50 per foot	8,250.00
Roustabout labor and slush pit	700.00
Teaming	1,000.00
40 ft. 15½-in. casing	154.40
500 ft. 12½-in casing	1,490.00
1200 ft. 10-in. casing	2,856.00
2000 ft. 8¼-in Casing	3,040.00
2800 ft. 6⅝-in. casing	3,080.00
3300 ft. 5 3/16-in. casing	2,871.00
Tanks	300.00
2000 ft. 2-in. water line	400.00
2000 ft. 2-in. gas line	400.00
Water	450.00
Fuel	1,000.00
100 quart shot	250.00
Installation of individual pumps	2,500.00
Allowance for unforeseen accidents	1,000.00
Grand Total	$32,841.00
Salvage if an oil well	3,693.00
Net cost of drilling oil well	$29,148.00
Additional Salvage if dry hole	5,234.00
Net cost of dry hole	$23,914.00
Plugging dry hole	1,000.00
Total cost of dry hole	$24,914.00

CREEK COUNTY

(2261 Foot Well to Wilcox Sand)

Standard rig, complete	$2,500.00
Drilling contract @ $2.00 per foot	4,522.00
Teaming, roustabout labor and slush pit	1,250.00
40 ft. 12½-in casing	119.20
300 ft. 10-in. casing	814.00
1420 ft. 8¼-in. casing	2,158.40
2200 ft. 6⅝-in. casing	2,420.00
Water Tankage	230.30
1000 ft. 2-in water line	200.00
1000 ft. 2-in gas line	200.00
Fuel and water	1,200.00
100 quart shot	250.00
Fittings and connections	500.00
Allowances for unforeseen accidents	800.00
Grand Total	$17,163.90
Salvage if an oil well	1,681.20
Net cost of producing well	$15,482.70
Additional salvage if dry hole	4,364.00
Net cost of a dry hole	$11,118.70

OSAGE COUNTY

(3000 Foot Well in Burbank Field)

Standard rig, complete with irons	$ 3,250.00
Drilling contract @ $3.50 per foot	10,500.00
Teaming materials to location	700.00
Trucking and Freight	800.00
Miscellaneous equipment	750.00
90 ft. 20-in casing	549.00
950 ft. 15½-in casing	2,767.00
1350 ft. 12½-in. casing	3,023.00
1600 ft. 10-in. casing	3,868.00
2350 ft. 8¼-in casing	3,572.00
2800 ft. 6⅝-in casing	3,080.00
200 ft. 5 3/16-in. casing	174.00
Labor	500.00
Fuel	1,200.00
Water	600.00
Initial shot	500.00
Allowances for unforeseen accidents	1,000.00
Grand Total	$36,833.00
Salvage if an oil well	6,615.00
Net cost of oil well	$30,218.00
Additional salvage if a dry hole	5,703.00
Net cost of dry hole	$24,515.00

Colonial
WELL BIT & JAR STEEL

Here IS Service

PRODUCED in the heart of the nation's steel making industry, the home of more expert steel makers than all the rest of the country combined, there is exceptional service in Colonial Well Bit and Jar Steel.

Backed by the more than 20 years' experience of the Colonial Mill devoted exclusively to the production of high grade Tool Steels.

When you have a tool made of "Colonial" you know that it is good.

Twenty continuous years of satisfaction, plus an equal number of years behind the founders of this company—this is the record that assures you of satisfactory service in Colonial Steels.

Colonial Steel Company

Established 1901

Pittsburgh Boston New Haven New York Cleveland
Cincinnati Detroit Chicago St. Louis Denver
Salt Lake City Wallace, Idaho
Edw. L. Soule' Co., San Francisco

Kansas

COWLEY COUNTY

(3200 Foot Well)*

Standard rig complete	$3,200.00
Repairs to rig while drilling	150.00
Drilling contract at $3.50 per foot	11,200.00
Roustabout labor and slush pit	200.00
Teaming	900.00
600 feet 15½-in. casing	3,300.00
1315 feet 12¾-in casing	4,115.95
1900 feet 10-in. casing	4,655.00
2330 feet 8¼-in casing	3,285.00
2900 feet 6⅝-in. casing	3,915.00
315 feet 5 3/16-in. casing	299.25
Tanks: 2 fuel, 1 water, 3 stock tanks	1,740.00
2000 feet 2-in. water line	450.00
Water, 90 days @ 5.00	450.00
Fuel 1500 bbls. @ $2.00	3,000.00
Shot, 50 qts	142.50
Installation individual pumping outfit	1,300.00
Allowances for unforeseen accidents	500.00
Grand total	$48,802.70
Salvage if an oil well	12,520.15
Net cost of oil well	$36,281.75
Additional salvage if dry hole	12,539.25
Net cost of dry hole	$23,742.50
Cost of plugging	850.00
Total cost of dry hole	$24,592.50

*Note—This list will apply to practically all sections where 3200 foot hole is required.

Louisiana

HAYNESVILLE

1 112 ft derrick, complete, erected	$ 900.00
150 ft. 10-in casing	367.50
2740 ft. 6-in casing	3,015.00
Liner, casinghead, cement, etc.	165.00
Labor, 35 days at $54.90	1,921.50
Fuel (gas), 28 days at $25.00	700.00
Water, 28 days, at $20.00	560.00
Teaming on material and rig	750.00
Rig repairs and maintenance	500.00
Total cost of completed well	$8,879.00

BELLEVUE

Derrick not used*

90 ft. 8-in casing	$ 175.00
350 ft. 6-in casing	385.00
1 6-in set shoe	12.00
Labor, 8 days, at $26.20	209.60
Fuel (gasoline)	21.60
Teaming	14.00
Rig repairs and maintenance	35.00
Total cost of completed well	$ 852.20

Arkansas

SMACKOVER

1 112-ft. derrick, complete, erected	$ 900.00
60 ft. 15½-in casing	290.40
650 ft. 10-in casing	1,592.50
2000 ft. 6-in casing	2,200.00
Liner, casinghead, cement, etc.	450.00
Labor, 25 days, at $54.90	1,372.50
Fuel (gas), 18 days at $18.00	324.00
Water, 18 days at $7.00	126.00
Teaming on material and rig	1,000.00
Rig repairs and maintenance	400.00
Total cost of completed well	8,655.40

SMACKOVER

A 2300 Foot Well—Louann Area

1 112 ft. derrick, complete, erected	$ 900.00
100 ft 10-in casing	245.00
2240 ft. 6-in casing	2,464.00
Liner, casinghead, cement, etc.	450.00
Labor, 30 days, @ $54.90	1,647.00
Fuel (gas), 23 days @ $18.00	414.00
Water, 23 days @ $7.00	161.00
Teaming on material and rig	1,000.00
Rig repairs and maintenance	400.00
Total Cost of Completed well	$7,681.00

(A 2000 Foot Well—Heavy Oil Area)

1 112 ft derrick, complete, erected	900.00
100 ft. 10-in. casing	245.00
2000 ft. 6-in. casing	2,200.00
Liner, casinghead, cement, etc.	450.00
Labor, 25 days @ $54.90	1,372.50
Fuel (gas) 18 days @ $18.00	414.00
Water, 18 days @ $7.00	126.00
Teaming on material and rig	1,000.00
Rig repairs and maintenance	400.00
Total cost of completed well	$7,107.50

STEPHENS †

1 88 ft. derrick, complete, erected	$ 750.00
100 ft. 10-in casing	245.00
2100 ft. 6-in casing	2,310.00
Liner, casinghead, cement, etc.	215.00
Labor, 25 days, at $54.90	1,372.50
Fuel (oil), 18 days at $27.50	495.00
Water, 18 days at $10.00	180.00
Teaming on material and rig	500.00
Rig repairs and maintenance	400.00
Total cost of completed well	$6,467.50

†It is thought that the new Oakland Field, in Union Parish, Louisiana, will compare very closely in all particulars with the Stephens Field, in Ouachita and Columbia Counties, Arkansas; and that drilling costs in the former field will closely approximate those in the latter.

‡Heavier and more costly control connections, necessary at Smackover and Cotton Valley, make those items appear large when compared with Haynesville and Stephens. Teaming at Smackover has been far more costly than elsewhere, due to bad roads. No drilling of any consequence has been done at El Dorado during 1923.

*Spudding machines used at Bellevue; derricks not being necessary.

GENERAL AMERICAN TANK CAR CORPORATION

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We design, build, re-build and repair all types of tank cars. We maintain a fleet of over 12,000 tank cars under lease.

A letter, wire or phone call to any of our sales offices will bring a representative to confer with you on problems of transportation of liquids.

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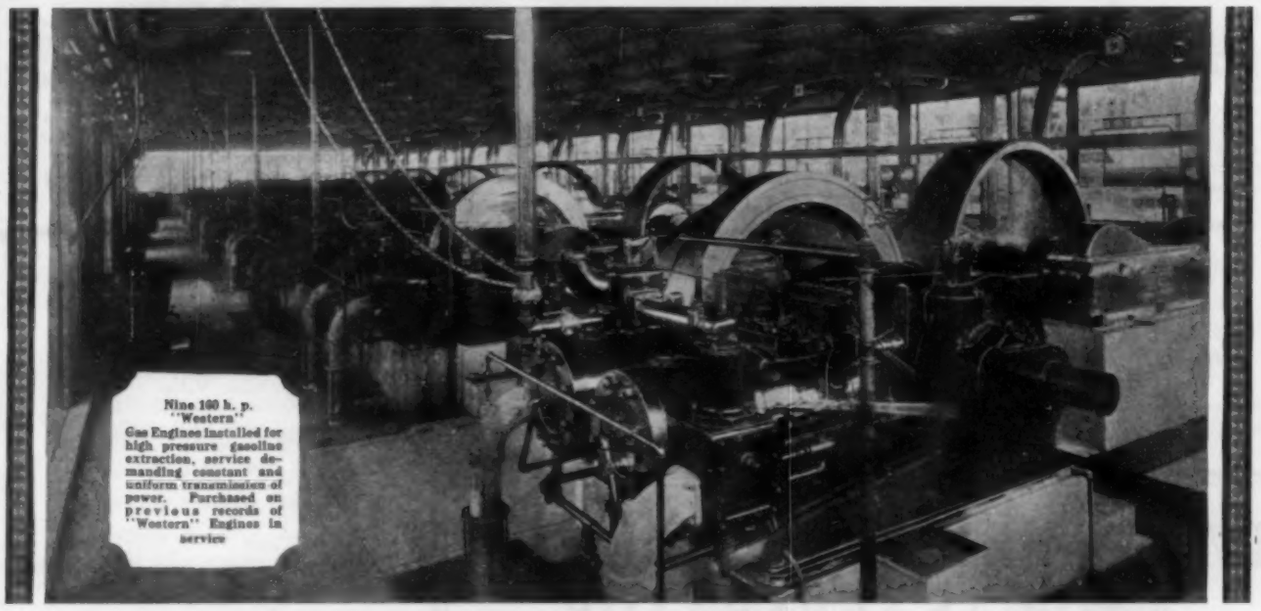
Cable Address "GENTANKAR" Chicago—All Codes


Nine 160 h. p.
"Western"
Gas Engines installed for high pressure gasoline extraction, service demanding constant and uniform transmission of power. Purchased on previous records of "Western" Engines in service

MAINTENANCE COST
Less than 20¢ per unit per day

"Western" Duplex Gas Engines in oil country service during a period of five years, operating continuously, and twenty-four hours a day for months at a time, have records showing maintenance costs as low as $72.00 per unit per year.

These records were not made under ideal conditions arranged for test purposes, but in actual service under the complete supervision and control of the company operating them.

Such records with definite figures covering performance and costs, most convincingly prove "Western" supremacy in efficiency, economy and dependability, and are available to any operating company on request.

For gasoline extraction, pumping, boosting and general power purposes in refinery service.
40-320 h.p. One, Two and Four Cylinder Units.
Catalog No. 505

Western Machinery Company

General Offices and Factory:
905 North Main Street, Los Angeles, California, U. S. A.

BRANCHES:

Tulsa Oklahoma | Okmulgee Oklahoma | San Francisco California | Bakersfield California

Kansas

COWLEY COUNTY

(3200 Foot Well)*

Standard rig complete	$3,200.00
Repairs to rig while drilling	150.00
Drilling contract at $3.50 per foot	11,200.00
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Teaming	900.00
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2330 feet 8¼-in casing	3,285.00
2900 feet 6⅝-in. casing	3,915.00
315 feet 5 3/16-in. casing	299.25
Tanks: 2 fuel, 1 water, 3 stock tanks	1,740.00
2000 feet 2-in. water line	450.00
Water, 90 days @ 5.00	450.00
Fuel 1500 bbls. @ $2.00	3,000.00
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PLANTS: East Chicago, Ind. Warren, Ohio Sand Springs, Okla.

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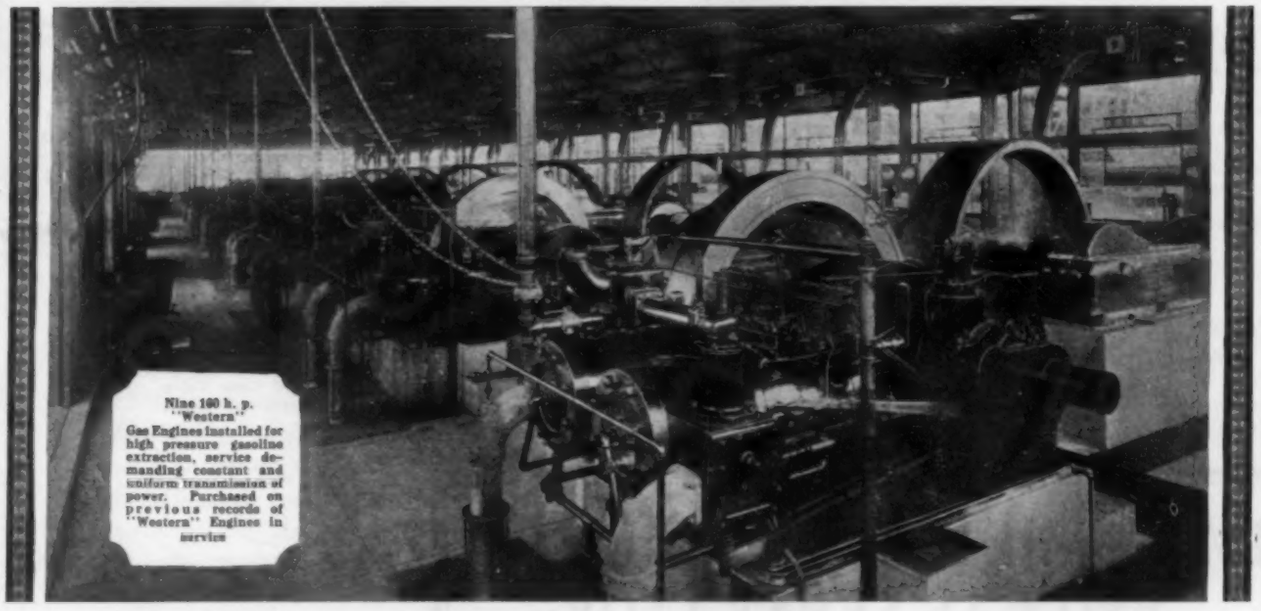
NEW YORK	SAN FRANCISCO, CALIF.	LOS ANGELES, CALIF.	DALLAS, TEX.	TULSA, OKLA.

Cable Address "GENTANKAR" Chicago—All Codes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Gas Engines installed for high pressure gasoline extraction, service demanding constant and uniform transmission of power. Purchased on previous records of "Western" Engines in service

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For gasoline extraction, pumping, boosting and general power purposes in refinery service.
40-320 h.p. One, Two and Four Cylinder Units.
Catalog No. 505

Western Machinery Company

General Offices and Factory:
905 North Main Street, Los Angeles, California, U. S. A.

BRANCHES:

Tulsa Oklahoma
Okmulgee Oklahoma
San Francisco California
Bakersfield California

COTTON VALLEY §

1 112-ft derrick, completed, erected ..$	900.00
120 ft 15½-in casing	580.80
1250 ft. 8¼-in casing	1,750.00
2450 ft. 6-in casing	2,695.00
Liner, casingheads, valves, connections, cement, etc.	1,800.00
Labor, 35 days at $54.90	1,921.50
Fuel (gas), 28 days at $25.00	700.00
Water, 28 days at $10.00	280.00
Freight and teaming	1,250.00
Rig repairs and maintenance	500.00
Total cost of completed well	12,377.30

Texas

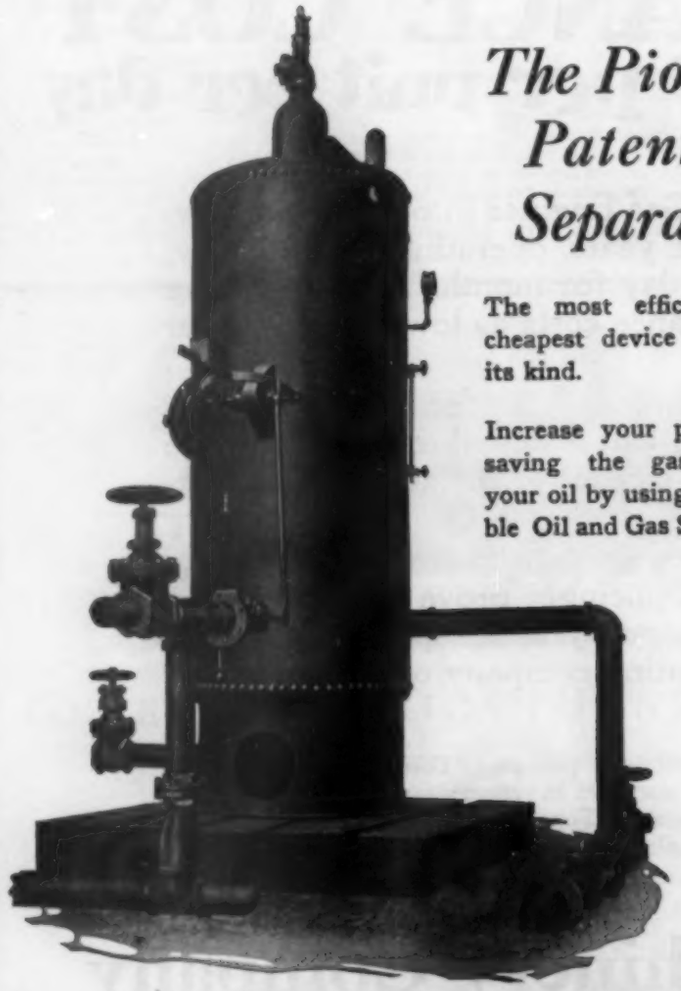
CORSICANA-POWELL-MEXIA AND CURRIE FIELDS

(2950 Foot Well)*

112 ft. rotary derrick erected	$1,100.00
Slush pit	125.00
Drilling 2950-foot hole by contract @ $3.00	8,850.00
Fuel and water—	
30 days fuel oil at $60 per day	1,800.00
30 days water service at $25 per day	750.00
Teaming and hauling	1,000.00
Tank, flow lines, etc.	3,000.00
125 ft. 10-in. 40-lb. casing	291.00
2950 ft. 6⅝-in. 24-lb casing	3,868.00
Christmas tree, miscellaneous fittings for flowing well, and cementing cas.	1,500.00
Total for completed flowing well..	$22,284.00
Cost of standardizing and equipping to pump, including tubing, rods, engine, etc.	5,000.00
Total cost for completed well and equipment	$27,284.00

*Note—In some instances production is obtained at Mexia and Currie from pay levels approximately 200 feet deeper than has been used in the above estimate.

IMPROVED TRUMBLE OIL AND GAS SEPARATOR



The Pioneer Patented Separator

The most efficient and cheapest device made of its kind.

Increase your profits by saving the gasoline in your oil by using a Trumble Oil and Gas Separator.

Trumble Gas Trap Company

WILLIAM C. RAE, Sales Manager, 804 Higgins Bldg., Los Angeles, Cal.

Telephone Metropolitan 1902

Eastern Representative, C. F. Camp, 311 Atco Bldg., Box 289, Tulsa, Okla.

GULF COAST

(3400 foot well*)

Average Cost of Gulf Coast Wells

Labor	$19,838.85
Teaming	666.62
Fuel and water	4,741.32
Supplies and Repairs	116.38
Drill Pipe Expense	1,305.00
Rig Rental Expense	2,190.00
Labor for erecting derrick	319.70
Lumber and material for derrick	1,495.56
4½-in Bottom Set Nipple—Lost	37.14
110 ft. 4½-in D. Pipe—Lost	48.39
22 ft. 4½-in Getty Screen	97.89
10-in Set Shoe	23.40
6¾-in Set Shoe	12.21
21 ft. 6¾-in D. B. X. Casing	28.04
Miscl. Valves and Ftgs.	254.88
Bolts and Turnbuckles	42.35
2-4-in Chapman Gate Valves	90.90
1-4-in Kerotest Gate Valve	182.27
1-6-in Kerotest Gate Valve	299.27
1-6-in Darling Gate Valve	245.68
4-in and 6-in Casing Clamps	33.66
41 ft 4½-in Galv. Screen	181.05
¾-in Choker Nipple	3.75
Xmas Tree Fittings	83.37
2-4-in Chapman Gate Valves	90.90
6-in Darling Gate Valves	296.25
6-in Kerotest Gate Valves	299.85
1250 ft 10-in casing	3,225.88
3405 ft. 6¾-in casing	4,492.90
	$40,753.54

*Note—Can be used for any Coastal field where wells are taken to this depth.

MORAN FIELD AND WICHITA COUNTY

(500-Foot Well*)

Slush pit	25.00
Drilling 500 ft. @ $1.50 per foot with spudding machine furnished complete by contractor	750.00
Fuel and water—	
Motor fuel for engine power	25.00
Water service	75.00
Freight, hauling and miscellaneous expenses	25.00
500 ft. 5 3/16-in. 17-lb. casing	450.00
Tubing, rods, jack and miscellaneous connections necessary to hook up completed well on central power plant	200.00
Totals	$1,550.00

*Note—The above estimate on cost of drilling will also apply on 500-foot wells in Callahan and Archer Counties.

(300-Foot Well)

Slush pit	$ 25.00
Drilling 300 ft. @ $1.25 per foot with spudding machine furnished by contractor	375.00
Fuel and water—	
Motor fuel for engine power	15.00
Water service	50.00
Freight, hauling and miscellaneous expenses	25.00
300 ft. 5 3/16-in. 17-lb. casing	270.00
Tubing, rods, jack and miscellaneous connections necessary to hook up completed well on central power plant	175.00
Totals	$ 935.00

(Continued on page 84)

INCREASE CALIFORNIA PIPE LINE RATES

Los Angeles, Calif., Jan. 5.—The Railroad Commission of California has granted permission to the General Petroleum Corporation to increase tariff on moving oil through its pipe line from Kern County to Los Angeles from 15 to 25 cents to 30 cents flat a barrel. This is the only pipe line operating from Kern County to Los Angeles Basin, or to the southern fields

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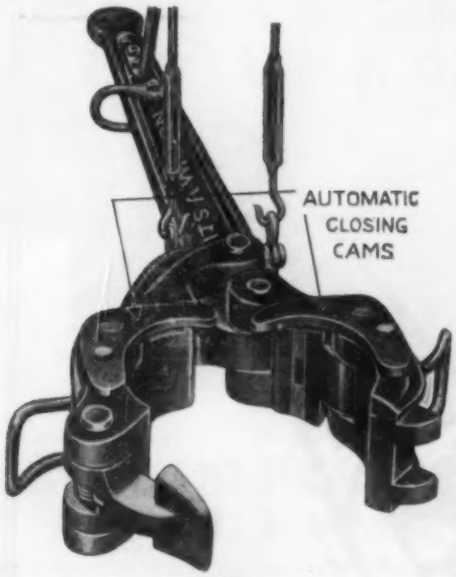
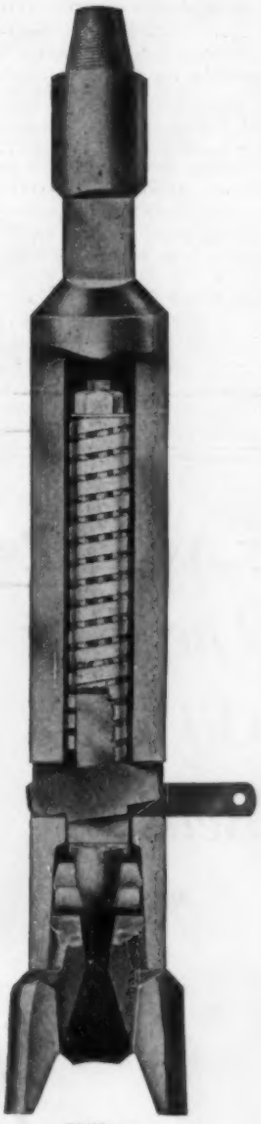
Wilson
Spring Latch Elevator
Patented



Wilson
Spring Latch Tongs
Patented



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We have just published a new catalog describing our various types of Tubing, Casing and Rotary Elevators. Drop us a line (to our nearest office) and we shall be pleased to forward a copy. Literature describing Wilson Tongs, Underreamers, Automatic Expansion Pistons, Rotary Drive Bushings, Circulating Heads and Coring Tools will also be sent upon request. Wilson Products are obtainable at leading supply houses. Accept no substitutes.

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ARCHER-WICHITA COUNTY

(1600 Foot Well*)

96x22 ft. rotary derrick erected	$ 750.00
Slush pit	35.00
Drilling 1600-foot hole by contract at $3.00 per foot	4,800.00
Fuel and water—	
15 days' fuel oil, 25 bbls. a day @ $2.00 per barrel delivered	750.00
15 days' water service @ $10.00 per day	150.00
Teaming and miscellaneous expenses	500.00
1600 ft. 6⅝-in. 20-lb. casing	1,765.00
Tubing, rods, jack and miscellaneous connections necessary to hook up completed well to central power plant	1,500.00
Total	$10,250.00

*Note—This estimate will be found fairly accurate for the Burkburnett, Electra, Kemp-Munger-Allen, Ferguson, Peterson, Gose and Wilmot-Wilson fields, but allowance must be made for remoteness of wells from supply base.

(1800-Foot Well*)

96x22 ft. rotary derrick erected	$ 750.00
Slush pit	35.00
Drilling 1800-foot hole by contract at $3.00 per foot	5,400.00
Fuel and water—	
15 days' fuel oil, 25 bbls. a day @ $2.00 per bbl. delivered	750.00
15 days' water service @ $10.00 per day	150.00
Teaming and miscellaneous expenses	600.00
1800 ft. 6⅝-in. 20-lb. casing	1,983.00
Tubing, rods, jack and miscellaneous connections necessary to hook up completed well to central power plant	1,600.00
Total	$11,268.00

*Note—The above estimate on cost of drilling will also apply on 1800-foot wells in the Corsicana-Powell field in Navarro County, Texas.

By Actual Performance—

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ON SALE AT ALL FRICK-REID STORES

EASTLAND-STEPHENS AND YOUNG COUNTY

(3200-Foot Well*)

84x22 ft. sway-braced standard rig with 6-inch Ideal rig irons, California pattern	$2,500.00
Drilling 3200-ft. hole by contract @ $3.00 per foot	11,200.00
Fuel and water—	
50 days gas at $15.00 per day	750.00
50 days water service at $10.00 per day	500.00
Freight and hauling	2,000.00
Tanks, flow lines, etc.	2,000.00
500 ft. 15½-in. 70-lb. casing	2,608.00
1000 ft. 12½-in. 50-lb casing	2,975.00
1600 ft. 10-in. 40-lb. casing	3,723.00
2300 ft. 8¼-in. 32-lb. casing	4,331.00
2900 ft 6⅝-in. 24-lb. casing	3,802.00
3200 ft. 5 3/16-in. 17-lb. casing	2,888.00
100 qts. of nitroglycerine for shot	350.00
Add 10 per cent for unforeseen expenses	5,562.00
Grand total	$43,589.00
Less estimated salvage for producing well	8,100.00
Net cost of producing well	$35,489.00
Less additional salvage if dry hole	4,845.00
Net loss if dry hole	$30,644.00

*Note—This estimate will be found fairly accurate for wells drilled in Palo Pinto and Shackelford Counties.

(2500 Foot Well in South Bend and Bunger Field)

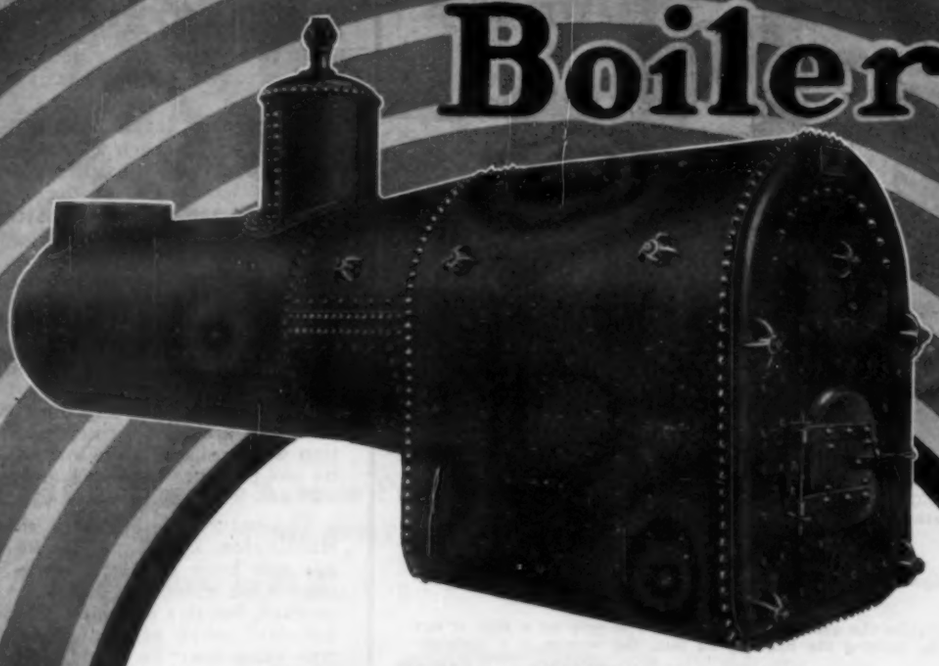
84x22 ft. sway-braced standard rig, with 6-inch Ideal rig irons, California pattern	$2,500.00
Drilling 2500-ft hole by contract @ $3.00 per foot	7,500.00
Fuel and water—	
45 days gas @ $15.00 per day	675.00
45 days water service @ $10 per day	450.00
Freight and hauling	2,000.00
Tanks, flow lines, etc.	1,500.00
300 ft. 15½-in. 70-lb. casing	1,600.00
900 ft. 12½-in. 50-lb. casing	2,700.00
1700 ft. 10-in. 40-lb. casing	3,950.00
2100 ft. 8¼-in. 32-lb. casing	3,955.00
2500 ft. 6⅝-in. 24-lb. casing	3,278.00
100 qts. nitroglycerine for shot	350.00
Add 10 per cent for unforeseen expenses	3,045.00
Grand total	$33,503.00
Less estimated salvage for producing well	6,210.00
Net cost of producing well	$27,293.00
Less additional salvage if dry hole	6,014.00
Net loss if dry hole	$21,179.00

*Note—This estimate will be found fairly accurate for completing 2500-foot wells in the South Bend pool, Young County, also.

(4100-Foot Well, Young and Stephens Counties)

84x22 ft. sway-braced standard rig with 6-in. Ideal rig irons, California pattern	$2,500.00
Drilling 4100-ft. hole by contract @ $3.00 per foot	16,400.00
Fuel and water—	
60 days gas at $15.00 per day	900.00
60 days water service at $10 per day	600.00
Freight and hauling	3,000.00
Tanks, flow lines, etc.	2,000.00
150 ft. 20-in. 90-lb casing	1,175.00
300 ft. 15½-in. 70-lb. casing	1,565.00
800 ft. 12½-in. 50-lb. casing	2,380.00
1200 ft. 10-in. 40-lb. casing	2,790.00
2100 ft. 8¼-in. 32-lb. casing	3,955.00
3600 ft. 6⅝-in. 24-lb. casing	4,720.00
4100 ft. 5 3/16-in. 20-lb. casing	4,440.00
100 qts. of nitroglycerine for shot	350.00
Add 10 per cent for unforeseen expenses	4,677.00
Grand total	$51,452.00
Less estimated salvage for producing well	5,275.00
Net cost of producing well	$46,177.00
Less additional salvage if dry hole	7,966.00
Net loss if dry hole	$38,211.00

Titusville Oil Country Boilers -



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Designed to meet the exacting needs of the oil fields. Built by careful workmen in a modern shop. Maintaining a half century record for excellence that makes "TITUSVILLE" Oil Country equipment recognized as standard wherever wells are drilled.

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Nine Reasons Why—

EVER-GRIP WRENCHES

Are Preferred by Good Mechanics and Users of Wrenches

14" Ever-Grip Pipe Wrench | 12" Ever-Grip Nut Wrench | 10" Ever-Grip Nut Wrench | 10" Ever-Grip Pipe Wrench | 8" Ever-Grip Nut Wrench

1. Ever-Grip Wrench is designed, constructed and tested to withstand great strains and rough usage

2. Ever-Grip construction enables the user to get a positive vise grip on a pipe or nut and hold until released by turning the handle. In fact, the wrench is a complete vise in itself.

3. Ever-Grip Wrench is made of high grade carbon steel particularly selected to obtain the maximum tensile strength and endurance, thoroughly heat treated, increasing its hardness and strength.

4. The special design of Ever-Grip Wrench permits a jaw capacity and leverage, when opened, considerably in excess of its size when closed.

   We contend that measuring the capacity of wrenches and determining sizes by their length is in error, and that the correct method is to measure from a point midway between the two jaws when opened, and the end of the handle, to ascertain the leverage. This combined with the capacity of the jaws and the tensile strength of the wrench, are the only factors to be considered. You will note that when an Ever-Grip Wrench is open, the length is increased and the distance from the point of the lower jaw to the end of the handle remains the same, therefore, the wider the jaws are opened the greater the leverage obtained.

5. Ever-Grip Wrench is especially adapted for use in tight places, around moving machinery, hot engines and high reaches, as it is easily adjusted with one hand.

6. Springing and burring of the jaws are practically eliminated in Ever-Grip Wrench by the use of the high grade steel and the process used in hardening.

7. Heavy threads in the handle, and cut teeth on the wrench bar, carefully machined and properly hardened, prevent them from binding or sticking.

8. The jaws of Ever-Grip Wrench are opened by turning the handle to the left, and are closed by turning to the right, using the grip of the whole hand, instead of two fingers to adjust it. This, besides assuring a positive grip on a nut or pipe, makes it practical and efficient when used as a vise.

9. The saving in time alone in adjusting it, over that required with the old fashioned type saves its cost in a very short time.

EVER-GRIP WRENCHES

"THEY NEVER SLIP"

Manufactured by EVER-GRIP WRENCH CO., 129 S. LaSalle St., Chicago

California Expected to Draw on Stocks

(Continued from page 22)

teristics which formerly were not well defined have become more manifest. Their effect has been reflected in the recent production of the wells. For this reason, both the B and C methods should give more reliable results at this time than they did when applied earlier in the life of the fields; particularly before they had reached their peak and during the time that production was curtailed last summer.

The higher estimate derived by either method will therefore probably represent the possible maximum of the field. In the estimate as finally made, the future production has been made based upon the results indicated by these two curves and a general knowledge of other factors bearing on the field.

Huntington Beach has declined so regularly and at such a slow rate since last August that it may be expected to continue to decline at the same rate and in the same manner. Attention is particularly called to the parallelism of the D curves for Huntington Beach. The field is furnishing very little new production at the present time. Most of the drilling being done in the field is in the nature of repair work on wells rather than new drilling. By the time the price of oil justifies deep drilling again, the undrilled land adjacent to areas of former high production will probably have lost so much of its gas pressure that such deep drilling will not be worth while.

The nature of the south side of the Huntington Beach anticline or structure has not been clearly proven by drilling. One company has most of this acreage, but this company will probably not drill much of it during 1924. Its true value must be established by prospecting, but with so much surplus oil available, it is probable that it will not be necessary to rapidly drill this land should it prove to have a great value.

At Santa Fe Springs as shown on the accompanying chart, the D curves for August, September, October and November show a sharp decline. Even the older wells fail to show any great departure from this sharp decline. Since last September nearly 80 wells have stopped flowing. In view of this situation, the production of the field is expected to continue to fall at a rate similar to the decline shown since last September. Within a month or two, the new production which now causes a slight irregularity in the decline of the total production will cease to be a factor. Great difficulty is had in making wells flow at all. New wells are being brought in as pumpers.

The most alarming feature however is the fact that the occurrences of water is particularly widespread on the south side of the structure. When there ceases to be any new production, the entire field will tend to drop in production more rapidly than it has in the past until the wells are pumping; thereafter, the decline in production will be very gradual.

The decline in production at Long Beach should be at a rate between that of Santa Fe Springs and Huntington Beach. The Long Beach field is narrower so that there is a better chance

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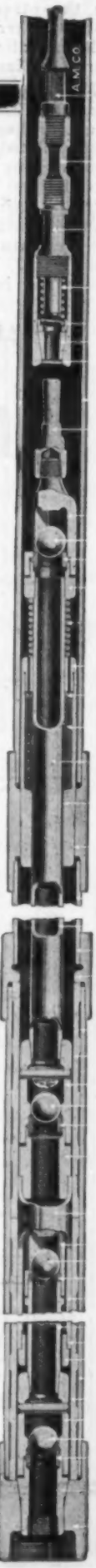

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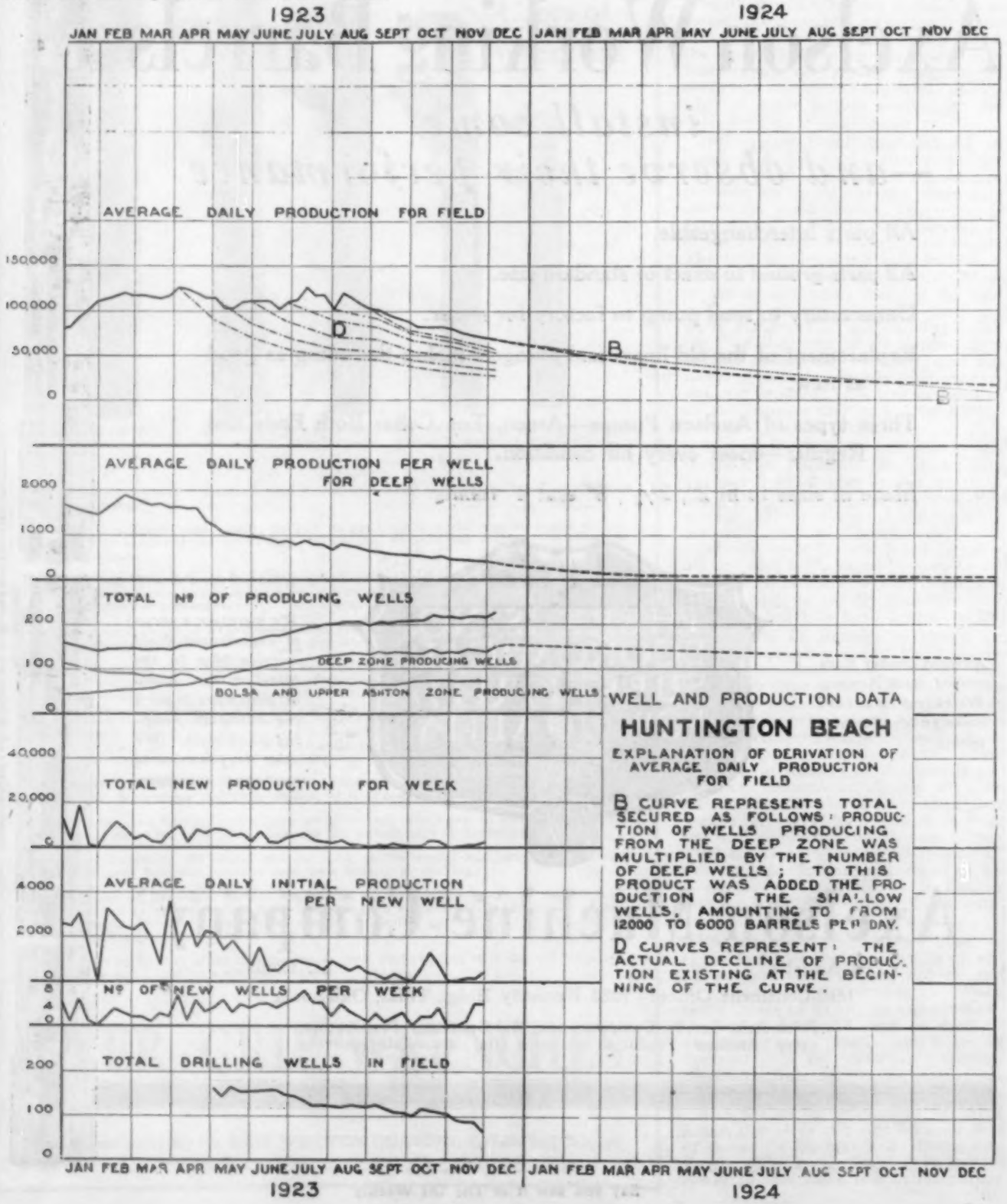
for the encroachment of edge water. On the other hand, the oil zone is much thicker so that production in wells not affected by water should be more sustained.

The operator in the Huntington Beach and Santa Fe Springs fields who is not drilling for production is to be congratulated, for wells that were not completed by the first of this year will probably not pay for their drilling unless the price of oil increases very markedly with the single exception of the area mentioned above at Huntington Beach. The deep zone at Long Beach still has a potential value near the crest of the fold. Occasional large wells may still be expected in the future. Production to the northwest is of such character that it is safe to state that this end of the field has nearly been reached. While wells now drilling in some instances may be expected to pay, it is interesting to note that during December the average daily initial production per new well at Long Beach dropped to 1000 barrels even though there was a 5000 to 7000 barrel well among the new producers.

The following tables give the results derived by methods B and C and the final estimate for each of the three fields:

HUNTINGTON BEACH FIELD ESTIMATES MADE DECEMBER 1923

Month	Method "B"	Final Estimate
Dec. 1923	70,300-actual	70,300-actual
Jan. 1924	63,000	62,000
Feb. 1924	58,000	53,000
Mar. 1924	52,000	46,000
Apr. 1924	46,000	42,000
May 1924	42,000	37,000
June 1924	38,000	32,000
July 1924	34,000	27,000
Aug. 1924	30,000	24,000
Sept. 1924	26,000	23,000
Oct. 1924	22,000	22,000
Nov. 1924	18,000	21,000
Dec. 1924	14,000	20,000


1923
1924
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
AVERAGE DAILY PRODUCTION FOR FIELD
150000
100,000
50,000
0
D
B
AVERAGE DAILY PRODUCTION PER WELL FOR DEEP WELLS
2000
1000
0
TOTAL Nº OF PRODUCING WELLS
200
100
0
DEEP ZONE PRODUCING WELLS
BOLSA AND UPPER ASHTON ZONE PRODUCING WELLS
40,000
20,000
0
TOTAL NEW PRODUCTION FOR WEEK
4000
2000
0
AVERAGE DAILY INITIAL PRODUCTION PER NEW WELL
8
4
0
Nº OF NEW WELLS PER WEEK
200
100
0
TOTAL DRILLING WELLS IN FIELD
WELL AND PRODUCTION DATA
HUNTINGTON BEACH
EXPLANATION OF DERIVATION OF AVERAGE DAILY PRODUCTION FOR FIELD
B CURVE REPRESENTS TOTAL SECURED AS FOLLOWS: PRODUCTION OF WELLS PRODUCING FROM THE DEEP ZONE WAS MULTIPLIED BY THE NUMBER OF DEEP WELLS; TO THIS PRODUCT WAS ADDED THE PRODUCTION OF THE SHALLOW WELLS, AMOUNTING TO FROM 12000 TO 6000 BARRELS PER DAY.
D CURVES REPRESENT THE ACTUAL DECLINE OF PRODUCTION EXISTING AT THE BEGINNING OF THE CURVE.

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Seamless Steel Casing and Pipe

Its Use In Deep Wells Is Imperative

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Strength for Pulling Strains

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LONG BEACH FIELD ESTIMATES MADE DECEMEBER, 1923

Month—	Method "B"	Method "C"	Final Estimate
Dec., 1923, actual	243,200	243,200	243,200
January, 1924	217,000	235,000	217,000
February, 1924	205,000	191,000	177,000
March, 1924	190,000	162,000	147,000
April, 1924	163,000	.....	120,000
May, 1924	137,000	.....	97,000
June, 1924	110,000	.....	79,000
July, 1924	82,000	.....	70,000
August, 1924	60,000	.....	61,000
September, 1924	45,000	.....	52,000
October, 1924	38,000	.....	43,000
November, 1924	31,000	.....	34,000
December, 1924	25,000	.....	25,000

SANTA FE SPRINGS FIELD ESTIMATES MADE DECEMBER, 1923

Month—	Method "B"	Method "C"	Final Estimate
Dec., 1923, actual	208,600	208,600	208,600
January, 1924	157,000	138,000	150,000
February, 1924	100,000	72,000	83,000
March, 1924	32,000	24,000	60,000
April, 1924	28,000	.....	50,000
May, 1924	27,000	.....	46,000
June, 1924	26,000	.....	42,500
July, 1924	25,000	.....	38,500
August, 1924	24,000	.....	35,000
September, 1924	23,000	.....	31,500
October, 1924	22,000	.....	28,000
November, 1924	21,000	.....	24,500
December, 1924	20,000	.....	21,000

In considering future production, the effect of new discoveries cannot well be taken into consideration, especially if the discovery has not yet been made or if no production test of oil showings has been made in a well. In the early part of the life of every California field, a certain number of water problems must be solved to locate proper cementing points and finishing depths. Five years ago it required a year or two for a new field to get a good start. More recently the time has been cut down to nine to 12 months. A further reduction of the interval that elapses between the discovery and the peak of production of a new field may be expected in the future. This will be due to the increased rate at which rotary drilling makes it possible to complete a well. Deep wells at Santa Fe Springs have been finished in as little as four months. A few at Signal Hill have been finished in three months. Wells in the Torrance field 3800 feet deep are finished in two months. Even hard formations are now drilled rapidly with special hard rock bits, so that no great delay is encountered; neither are fishing jobs as frequent as formerly. This speeding up means that should a new field be found during the first half of 1924, such field might near the end of the year produce a quantity of oil sufficiently great to cause some departure from the estimates submitted herewith.

The outlook at the beginning of 1924 is vastly different from that of 1922 and 1923. During these years there was a constant increase in production until last September. At the beginning of 1922 the presence of the upper zones was definitely known at Huntington Beach, Long Beach and Santa Fe Springs. At the beginning of 1923, the existence of deeper sands was known at Huntington Beach, Santa Fe Springs and Long Beach. By June of 1923 the existence of the very deepest sands at Long Beach had been proven. In contrast to this situation, 1924 opens with the character of the Torrance-Redondo field well defined; the extent of the Compton field though probably great, undefined, but with conditions that do not promise intensive drilling and with the Wheeler Ridge and the Rideout Heights fields undefined yet indicating a small total production. Those wildcat wells in the Los Angeles basin which during November had evidence of oil in core barrel samples, have either failed to secure water shutoffs if oil was present or else undue stress has been placed in the evidence of oil in the core barrel samples. In any event, none has produced sufficient fluid containing oil to permit its inspection. The search for new fields is on, but the sure and easy hunting grounds have been covered rather thoroughly. New discoveries will be based on less certain evidence and attempts to make them will require more courage than heretofore.

The consumption of California last fall was running in excess of 450,000 barrels per day. Using the years 1922 and 1923 as indicators of what might occur in 1924, one may claim that a consumption of as much as 500,000 barrels per day may occur during the summer of this year.

In addition to its own consumption, California is shipping oil to the East.

De La Vergne Diesel Oil Engines

Vertical Diesel Oil Engine in Municipal Power Plant

without air compressors

Thirty years experience in oil engine manufacture

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STEEL SUPERIOR DERRICK

One of the Distinctive Features of Superior Steel Derricks

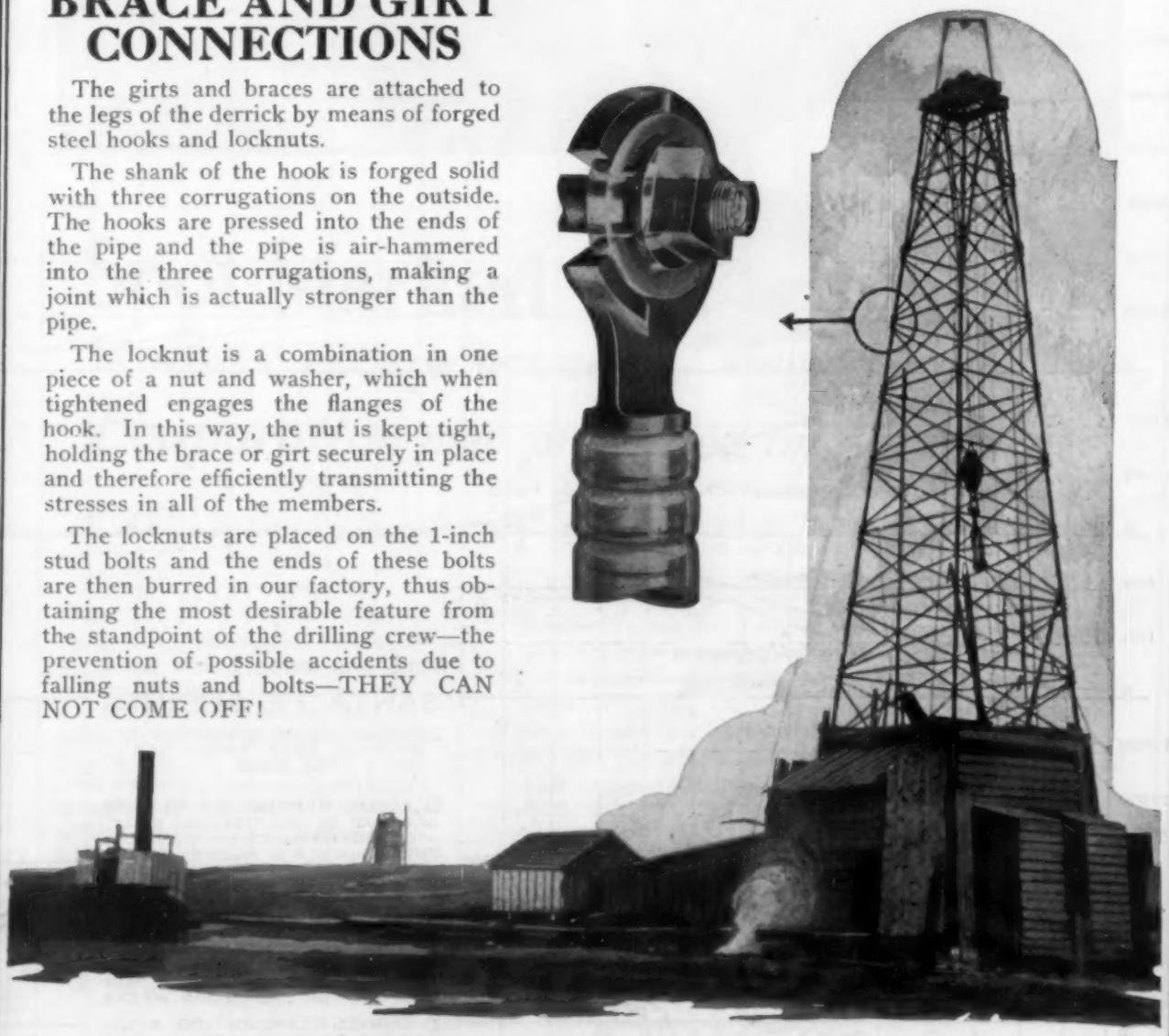
BRACE AND GIRT CONNECTIONS

The girts and braces are attached to the legs of the derrick by means of forged steel hooks and locknuts.

The shank of the hook is forged solid with three corrugations on the outside. The hooks are pressed into the ends of the pipe and the pipe is air-hammered into the three corrugations, making a joint which is actually stronger than the pipe.

The locknut is a combination in one piece of a nut and washer, which when tightened engages the flanges of the hook. In this way, the nut is kept tight, holding the brace or girt securely in place and therefore efficiently transmitting the stresses in all of the members.

The locknuts are placed on the 1-inch stud bolts and the ends of these bolts are then burred in our factory, thus obtaining the most desirable feature from the standpoint of the drilling crew—the prevention of possible accidents due to falling nuts and bolts—THEY CAN NOT COME OFF!



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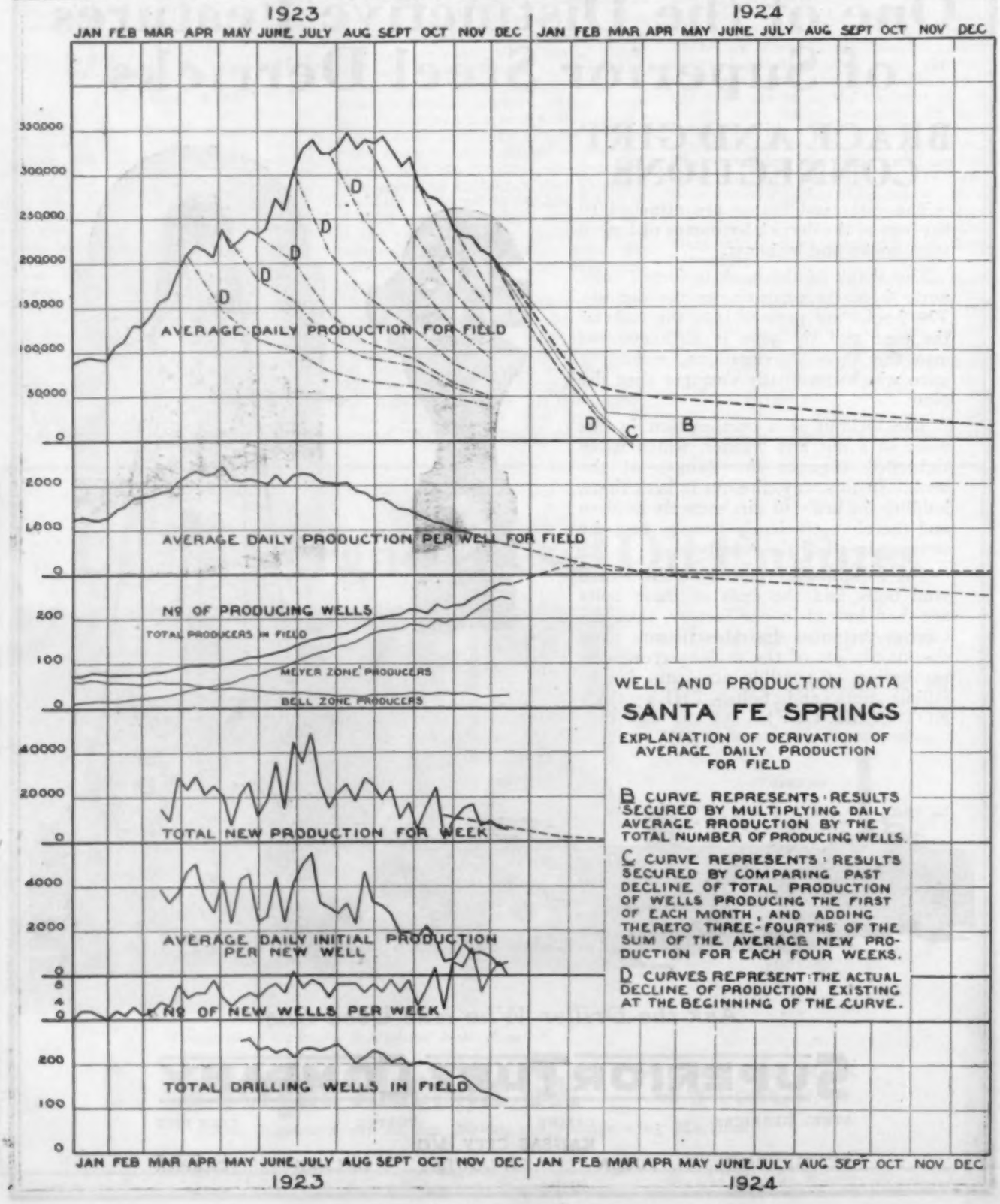
PITTSBURGH TULSA ST. LOUIS DALLAS CASPER

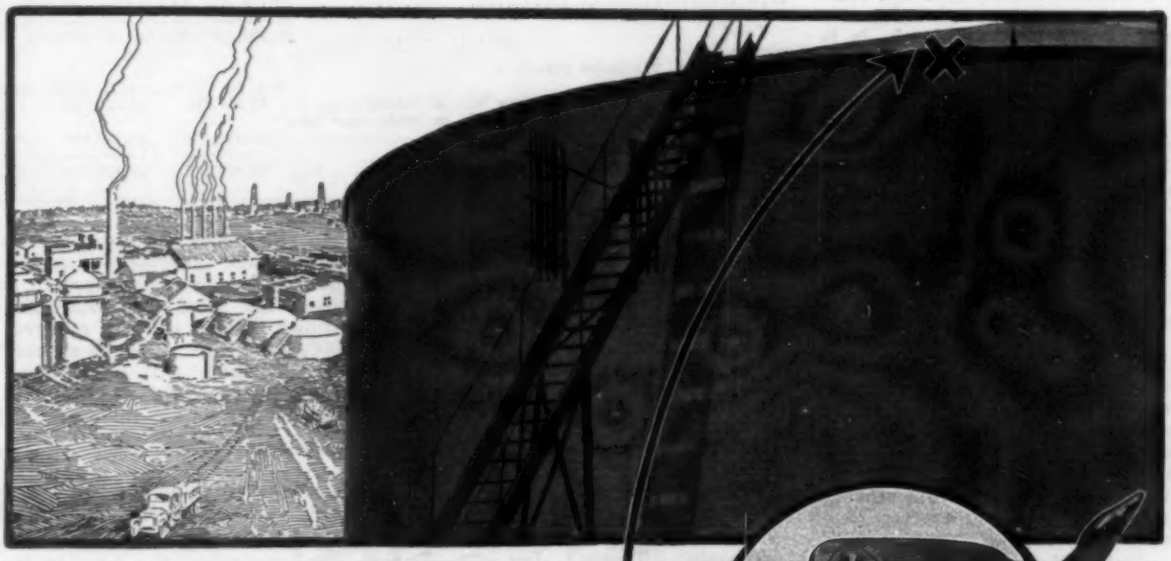
The amounts of oil shipped since last May are estimated as follows:

May	4,902,509 bbls	or 158,145 per day
June	5,020,262 bbls.	or 167,342 per day
July	6,100,327 bbls.	or 196,785 per day
August	4,871,047 bbls.	or 157,131, per day
September	5,672,060 bbls.	or 189,069 per day
October	5,331,688 bbls.	or 171,990 per day
November	5,043,579 bbls.	or 168,119 per day
December	5,665,820 bbls.	or 182,768 per day

It is most interesting to note that December shipments were equal to September shipments—the month of heaviest production—and that they are not much below July shipments, when the maximum amount of oil was sent to the Atlantic Coast. There is no available data as to the eastern commitments of the California marketing companies. It is understood that some contracts will end on the first of February, and on the first of March. Others will continue through 1924 and even thereafter. During December, oil was shipped at the rate of 182,000 barrels per day. If this be reduced in January to 150,000 barrels and in March to 100,000 barrels, during such months the total production of the state will be needed to supply its own needs and these eastern obligations. There will be very little oil available for storage on the whole, although the obligations of the different marketing companies may permit some to store oil, while they will require others to take oil from storage.

In this discussion, it has been as-


1923
1924
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
AVERAGE DAILY PRODUCTION FOR FIELD
AVERAGE DAILY PRODUCTION PER WELL FOR FIELD
Nº OF PRODUCING WELLS
TOTAL PRODUCERS IN FIELD
MEYER ZONE PRODUCERS
BELL ZONE PRODUCERS
TOTAL NEW PRODUCTION FOR WEEK
AVERAGE DAILY INITIAL PRODUCTION PER NEW WELL
Nº OF NEW WELLS PER WEEK
TOTAL DRILLING WELLS IN FIELD
WELL AND PRODUCTION DATA
SANTA FE SPRINGS
EXPLANATION OF DERIVATION OF AVERAGE DAILY PRODUCTION FOR FIELD
B CURVE REPRESENTS RESULTS SECURED BY MULTIPLYING DAILY AVERAGE PRODUCTION BY THE TOTAL NUMBER OF PRODUCING WELLS.
C CURVE REPRESENTS RESULTS SECURED BY COMPARING PAST DECLINE OF TOTAL PRODUCTION OF WELLS PRODUCING THE FIRST OF EACH MONTH, AND ADDING THERETO THREE-FOURTHS OF THE SUM OF THE AVERAGE NEW PRODUCTION FOR EACH FOUR WEEKS.
D CURVES REPRESENT THE ACTUAL DECLINE OF PRODUCTION EXISTING AT THE BEGINNING OF THE CURVE.



Spot Marked X
is where escape occurred
Evaporation now prevented by

Made in all sizes, for flat or conical roofs
Approved by the Underwriters' Laboratories, Inc.

After years of investigation, experimenting, testing, we have gradually developed ***a complete line*** *of evaporation-prevention and fire-prevention equipment. So today,* ***no matter where a tank is bought,*** *it can be OCECO equipt thereby reducing evaporation to the very minimum, effecting fire protection, and gaining a big saving in insurance premiums.*

THERE were many "get-aways" with the old gauge and thief hole cover. Frequently it staid open for days at a time and let the oil (really gasoline) evaporate through the opening.

It meant a bad fire hazard, too—a constant menace—and also let water into the finished oil. A seemingly small item—yet serious in the losses that followed.

Then came the OCECO—absolutely self-closing. Strong, heavy cast iron—with cover seating in bronze ring—spark-proof.

And so gas-tight that you can light a match over it without danger of fire or explosion!

The OCECO Gauge and Thief Hole Cover not only positively cuts off all evaporation at this point, but helps make further important savings in lower insurance rates.

The Oil Conservation Engineering Co.

Manufacturers of fire-prevention and evaporation-prevention equipment for tanks

Addison Road & N. Y. C. Tracks, Cleveland, Ohio

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918 E. 12th Street, Los Angeles, Calif.
220 Iowa Building, Tulsa, Okla.
401-403 Perlstein Bldg., Beaumont, Texas

Beaumont Export & Import Co., Distributors
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OCECO

Say you saw it in The Oil Weekly

sumed that consumption will run about 400,000 barrels a day, rather than the more optimistic amount of 500,000 barrels that seems in part warranted by the rapid increase during 1922 and 1923. Since there are eastern commitments that will extend beyond March, it is clear that some shut in production in the older fields should be opened up during that month, and by July, the remainder of the shut in production will be made available. If all the oil now shut in is made available by the middle of the summer, the state's entire production will then only amount to its approximate consumption. Since July is one of the summer months, production will be apt to be below actual consumption. During the remainder of the year, consumption will be so much above production for the state that it will be necessary to draw on storage beginning at a low rate and increasing to about 75,000 barrels per day by the end of the year. In addition to this drain on storage, it will also be necessary, beginning approximately in April, to take from storage some oil to help fill the eastern obligations.

The relationship between stocks and consumption is important. A healthy condition of the industry will not exist if stocks fall to their low point of 20,000,000 barrels as in 1920. Consumption however, is now so much greater than stocks of 60,000,000 barrels, such as were had in 1915, will not be as objectionable now as then. Conditions as to stocks November 30, 1923, as compared with previous months was as follows:

FIELD, REFINERY, PIPE LINE AND TANK FARM STOCKS OF CRUDE, RESIDUUM AND STOCKS

	Nov. 30 1923	Oct. 31 1923	Nov. Stock Increases	Nov. 30 1922
Heavy crude, heavier than 20° A. P. I., including residuum	42,563,341	42,585,664	*22,323	40,959,327
Refinable crude, 20° A. P. I and lighter	34,269,727	33,659,232	610,495	†18,795,397
Tops	12,170,277	12,104,654	65,623	.....
Total	89,003,345	88,349,550	653,795	59,754,724

*Decrease. †Includes tops.

	Nov. 30, 1923	Oct. 31, 1923	Nov. 30, 1922
Total quantity of above products held at refineries	28,657,793	28,222,460	19,903,737
Total quantity of above products held in fields, pipe lines and tank farms	60,345,552	60,127,090	48,850,987
Total stocks as above	89,003,345	88,349,550	59,754,724

It is of particular interest to note that during November there was an actual decrease of heavy crude in stocks and that the increase in refinable crude only amounted to 20,000 barrels per day.

The total oil in storage within the state represents only six months of consumption. Making allowance for eastern shipments, the total amount of oil in storage represents approximately only a five month's supply. Just how soon the stocks of 89,000,000 barrels shown above will be reduced to 60,000,000 or less, depends on the amount of oil which will be shipped to the East during 1924, and the effect of new discoveries within the state. The indi-

Mexican Fields Active As Dry Weather Starts

Tampico, Tamps., Jan. 10.—Boom days are recalled in Cacalilao by the great amount of transportation of equipment that is going on now. With the beginning of the dry season every possible effort is made to get all material hauled to the fields. Roads leading into the Cacalilao district are crowded with teamsters, trucks and tractors, all headed for the field with loads of supplies.

At the docks crews of men are busily engaged carrying lumber ashore, dragging up equipment, and numbers of steel cranes are in operation along the bank swinging the heavier stuff from the boats. Barges are so scarce that rentals on them have been increasing steadily during the past few weeks. Two months ago owners were glad to let them out for small sums rather than have them idle.

The principal hauling is toward La Palma, where the Rich-Mex properties are being developed, and indications are that extensive operations have been planned in that part of the field.

Try and Try Again

This part of an old motto is the very thing that many people are still doing. Years ago it was necessary but today you may KNOW because others have tried and you may have the benefit of their experience. Use GANTZ TANKS first and you will be satisfied at last.

Bolted and Welded Tanks

GANTZ TANK COMPANY

SAPULPA, OKLAHOMA

Say you saw it in The Oil Weekly

ATLAS SUPPLY COMPANY

The ownership of the capital stock of the Atlas Supply Company, which passed into other hands several months ago, has been repurchased by the original owners, and the stores at Muskogee, Oklahoma, and Fort Worth, Texas, will be conducted by the old staff, who have guided its affairs since the establishment of the company in 1909, and who will be interested in continuing to give every service consistent with good business methods.

J. H. McDONALD,
President.

Say you saw it in The Oil Weekly

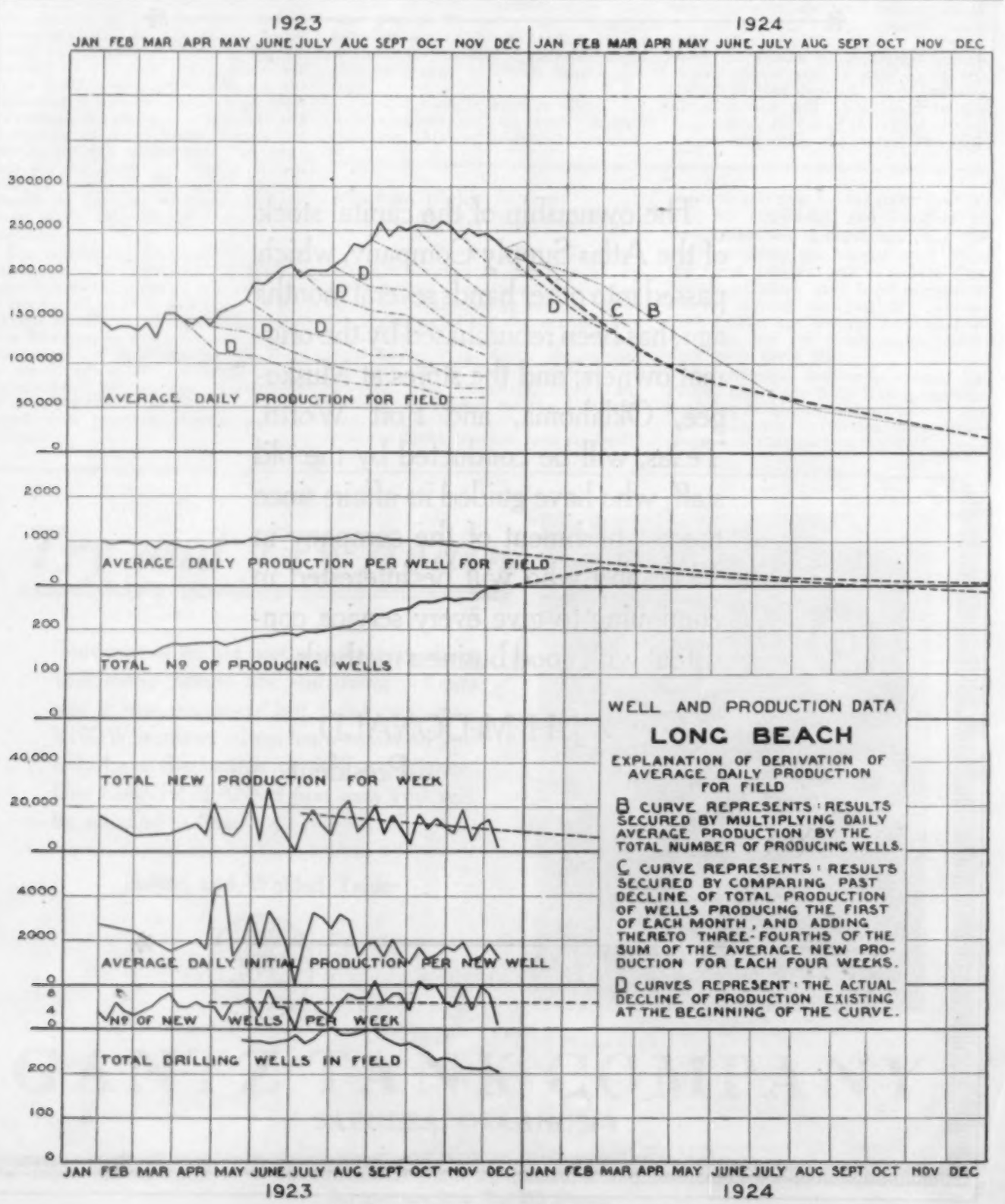
cations are that by summer, California's production will decline to an amount equal to the consumption of the state and the territory tributary to it prior to the time oil was shipped to the East. Production thereafter promises to fall well below consumption so that stocks will be materially reduced during the latter part of the year. Certain it is however, based upon the present view of the situation, there will be none too much oil in storage in California by the end of 1924.

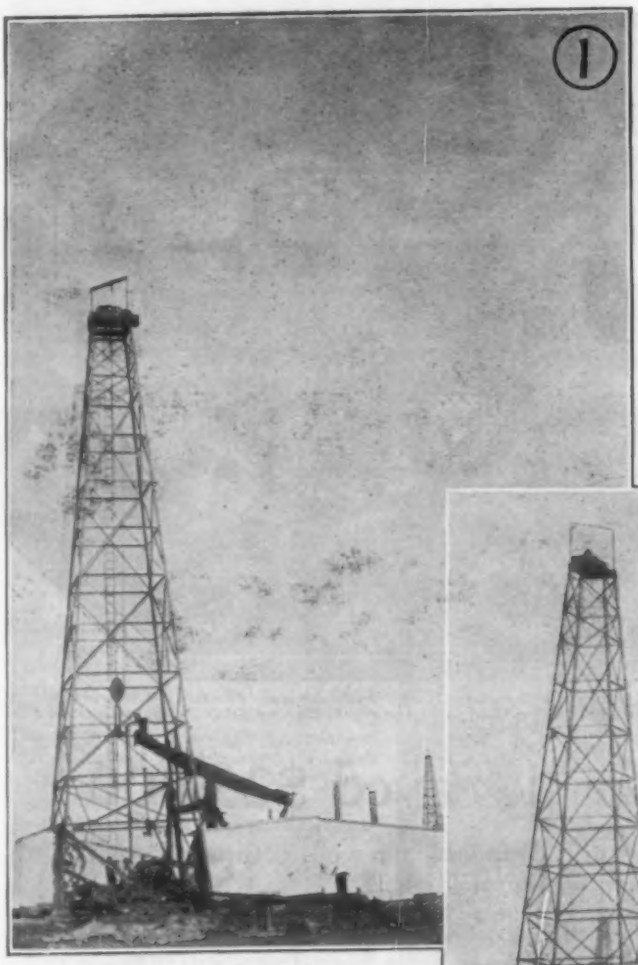
Same Structure in Cacalilao and Ebano

Tampico, Tamps., Jan. 10.—Geologists are wondering if the structure in the Cacalilao field is the same as that in Ebano. This question has been raised by the fact that the trend of production in Cacalilao is gradually being extended in the direction of the Ebano district.

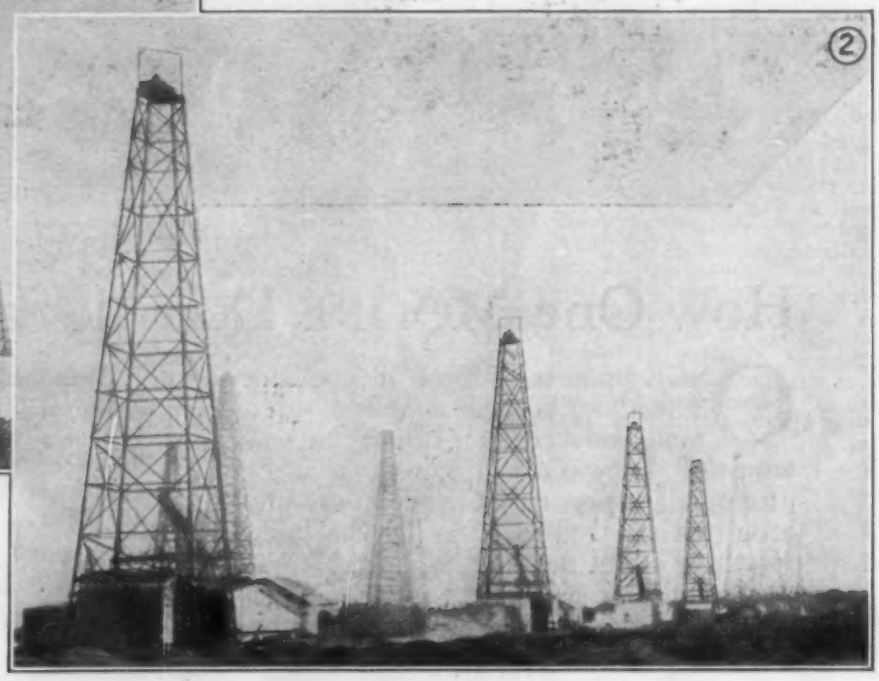
The Ebano pool was discovered in 1901 but it has not developed as rapidly as the fields around it. The field is owned by the Mexican Petroleum Company.

Denver, Colo., Jan. 2.—Fensland Oil Company, which was taken over some time ago by Producers and Refiners Corporation, is to be reorganized under the direction of T. B. Hoffer of Fort Worth, Texas, and operations in Oklahoma and Texas are to be resumed by the company on its own behalf.





to every Oil Producer



These five IDECO Steel Derricks (heavy type) are in the service of one of the large producing companies in the Corsicana-Powell field.

HAVE you given serious thought to the wise economy of STEEL DERRICKS—Do you ever stop to consider what IDECO means in the way of improved design, better construction and service and fair prices for users of oil well equipment?

Do you know that IDECO Steel (galvanized) Equipment is the best insurance obtainable against costly drilling delays and the hazards of fire and wind?

THE INTERNATIONAL
DERRICK AND EQUIPMENT CO.
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The largest company devoted exclusively to the manufacture of Steel (Galvanized) Equipment for the Oil, Gas and Artesian Industries

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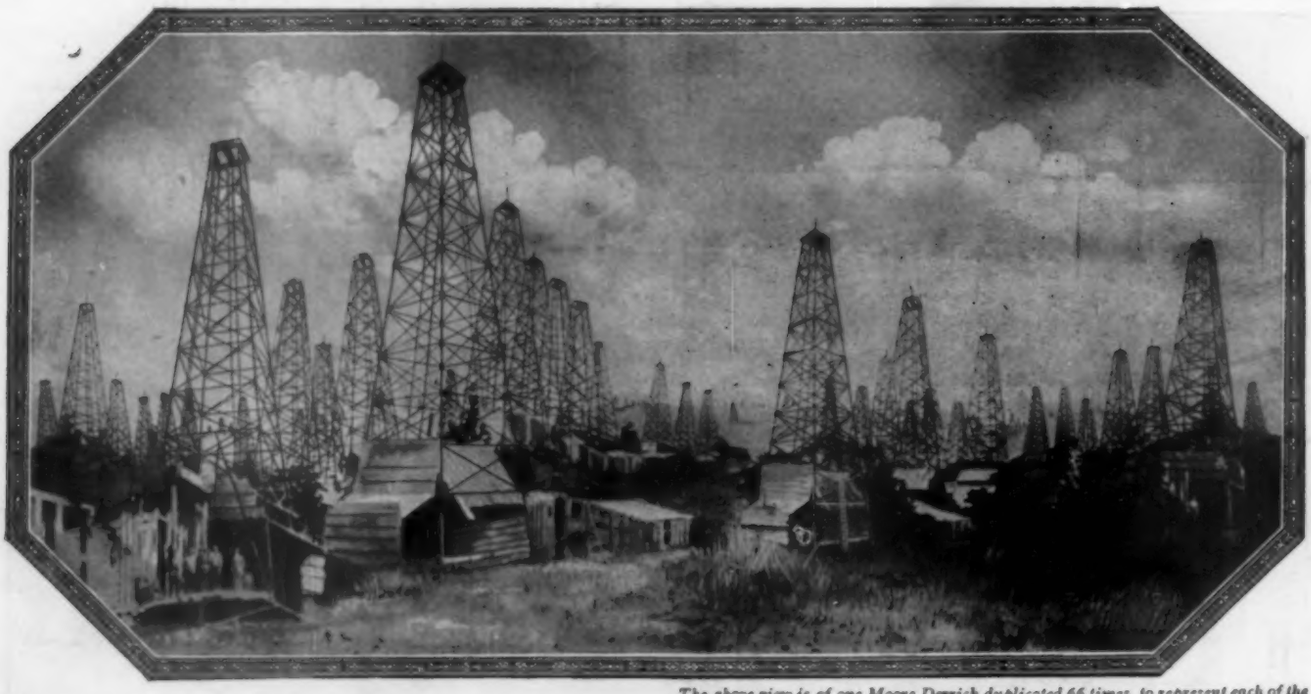
THE D E



The above view is of one Moore Derrick duplicated 66 times, to represent each of the 66 wells it has drilled for its owners, the Ebenezer Oil & Gas Co., Wellsville, N.Y.

How One MOORE Derrick Saved $25,000

ONCE upon a time an oil operator was about to drill a well. A salesman knocked at his door and was admitted. He was a bold salesman, for he attempted to persuade the oil man to buy a derrick of steel. Everybody who knew anything about drilling wells, said it was a crazy idea to use a steel derrick. Moreover, the price was high—nearly double the price of a wood derrick.

But this oil man had a bold and venturesome spirit. So he bought the steel derrick. Since that time, this same derrick has drilled 66 wells and it is still in use. The total repair cost has been less than twenty dollars. So the derrick cost per well has been less than ten dollars, saving several hundred dollars per well, compared with a wood derrick.

Roughly estimated, the total saving for the 66 wells must have been from $20,000 to $30,000. If present lumber and labor costs continue, the future saving, with such a record, would be more like $50,000.

Everybody will admit a wood derrick has some good features. For instance, you can drive a nail anywhere and hang your hat on it. But weigh its ultimate cost against that of a steel derrick, and you will be forced to admit that you are paying too much for the luxury of using wood derricks for drilling, pumping and casing pulling operations.

LEE C. MOORE & COMPANY, Inc., Pittsburgh, Pa.

ESTABLISHED 1907

CASPER, WYO.
Midwest Building
TULSA, OKLA.
Atlas Life Building
DALLAS, TEXAS
Magnolia Building
SHREVEPORT, LA.
P.O. Box 339
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California Representatives

BUCK & STODDARD

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Box 720 Arcade Station

SAN FRANCISCO ADDRESS
485 California Street

Howard R. Hughes

By R. L. Dudley

Howard Hughes is dead.

The man whose inventive genius developed one of the most useful tools known by the oil industry, and whose business genius made that product known the world over, died suddenly in his office in the Humble Building, in Houston, Monday afternoon.

To the industry at large the passing of Howard R. Hughes, president of the Hughes Tool Company and inventor of the Hughes rock bit, means the removal of a man whose mind was actively engaged in further developments in oil drilling equipment. To the many pioneers in Texas oil—men who now head big organizations—the loss is even keener. For Howard R. Hughes, though a man who never catered to any man to make him a friend, was a man whose friendships were many and warm. And to many of the younger generation the passing of Howard Hughes means the loss of a friend who was never failing with genuinely good advice and personal encouragement.

Mr. Hughes was discussing business matters with S. P. Brown, sales manager of the company, Monday afternoon, when, with a characteristic gesture, he arose to his feet. He often had laughingly commented that he could always do his best thinking pacing back and forth in his office and apparently he had arisen from his desk for this purpose, when, without a word, he collapsed. Physicians were hurriedly called but death was practically instantaneous.

As word of his death passed out from the office, friends from downtown office buildings began pouring into his suite of offices until the rooms were literally full of friends, many of them old time pals who went through Spindle Top, Sour Lake and other early Texas booms with Mr. Hughes.

It was a sober-faced group of men who stood around the body of the man who, a few hours previously, had been discussing his plans for an immediate vacation to Florida, and a new home which he contemplated building in Houston.

He was apparently in good health, and unusually cheerful during the morning and the lunch hour, and his death came as a shock to friends all over the United States.

Mr. Hughes is survived by his son, Howard R. Hughes, Jr., a student at Rice Institute, Houston; his parents, Mr. and Mrs. Felix Hughes of Los Angeles; and two brothers, Felix, Jr., and Rupert Hughes, the author. The funeral was held on Wednesday morning with interment in a Houston cemetery.

Howard R. Hughes was born in Lancaster, Missouri, in 1872. His father was an attorney, and young Hughes spent his boyhood in Keokuk, Iowa.

It was the writer's pleasure some time ago to read in advance of publication an article on Mr. Hughes' success as a business man, which the American Magazine had requested. The article, which dealt with his boyhood, his early struggles and his later success, went into some intimate details as to his personal adventures, and a request which Mr. Hughes made of the writer was characteristic:

"Take some of the brass bands out of it," he said, laughingly. "I wasn't quite as bad a boy as the writer has made me out, and I know that I do not deserve all the bouquets he has handed me."

As a youngster Mr. Hughes was always pugilistically inclined, although never accused of being a bully. It was his ability to get himself into scrapes that led to his entry into a number of schools, and almost as rapid a departure. His passion was for mechanics, and it was this controlling passion that finally stimulated him to concentrate on schooling himself. He entered Harvard and later returned to Keokuk when his father's health failed.

Intense study fitted him for the bar in a very short time, but he tired of the life of a lawyer and after serving as a newspaper reporter in Denver, and in other occupations, he finally found himself in the zinc mining section of Oklahoma and Missouri. He was at Joplin drilling zinc test holes when the Spindle Top oil field came in, and came to Texas immediately. He made a small fortune at Spindle Top, which he added to materially at Sour Lake. He shortly afterward married Miss Alene Gano. After a honeymoon in Europe he came back to lose everything he had at Batson Prairie when that field went to water almost in a night.

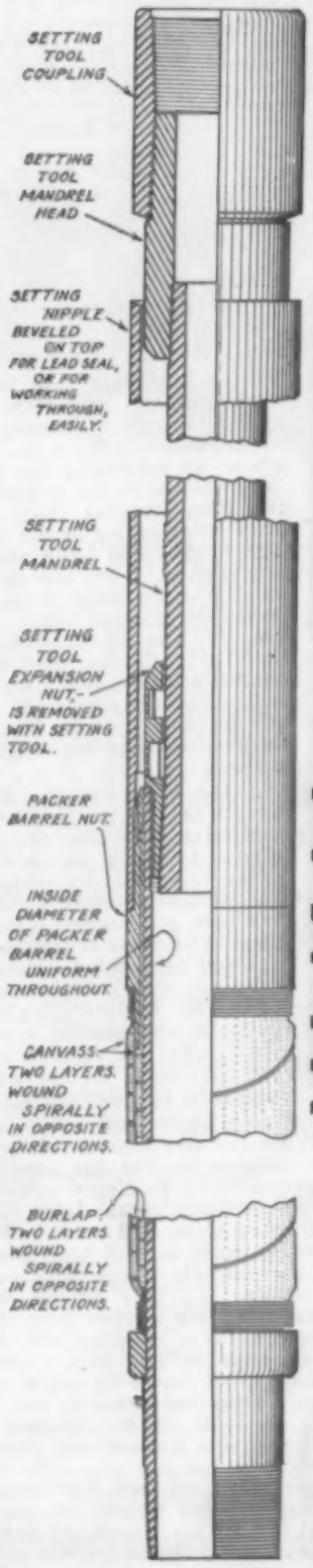
It was in 1908, after he had spent much time working on an invention that would drill rock, that he hit upon the basic idea which underlies the Hughes cone bit. He was in Keokuk, Iowa, at Christmas, on a visit to his parents, when he drew the plans. He applied for a patent shortly afterward and came back to Texas, where he interested his friend, W. B. Sharp, in the formation of the Sharp-Hughes Tool Company. But success came slowly. The drillers and operators were not anxious to try out the newfangled bit, although the need for such a bit was apparent. It was not until the Standard Oil Company of California used one of the bits to drill a formation which had successfully resisted a fish tail bit—and brought in a wonderful field—that the Hughes bit arrived.

A few years ago Mr. Hughes bought out the interests of those associated with him and at the time of his death was sole owner of the company. Its growth during the past seven or eight years has been phenomenal. Its large plant in Houston is considered as a model of its kind. Recently a sub-plant was built in Los Angeles. Mr. Hughes was a firm believer in the printed word and the Hughes bit, through consistent advertising he has done, as well as its successful performance, is known wherever the rotary is used.

When the war with Germany began Mr. Hughes applied his talents in a direction which he hoped would be of direct assistance on the front. He had completed plans, and actually had the machine made to drill horizontally into the enemy's trench with the idea of mining it. One of his proudest possessions was a letter from the Secretary of War thanking him for his work on this invention. Only the change from trench to active warfare kept it from being put into use. There was one side of Mr. Hughes which probably was not seen by those who knew him but casually. He did not boast about the help he extended to young men and women, but one of the real joys of his life was to help those whom he felt to be worthy of assistance. And those instances literally ran into the scores, possibly hundreds. His personal income was

(Continued on page 101)

W-K-M IMPROVED LINER PACKER PATENT APPLIED FOR


SETTING TOOL COUPLING
SETTING TOOL MANDREL HEAD
SETTING NIPPLE BEVELED ON TOP FOR LEAD SEAL, OR FOR WORKING THROUGH, EASILY.
SETTING TOOL MANDREL
SETTING TOOL EXPANSION NUT,- IS REMOVED WITH SETTING TOOL.
PACKER BARREL NUT.
INSIDE DIAMETER OF PACKER BARREL UNIFORM THROUGHOUT.
CANVASS TWO LAYERS. WOUND SPIRALLY IN OPPOSITE DIRECTIONS.
BURLAP TWO LAYERS. WOUND SPIRALLY IN OPPOSITE DIRECTIONS.
BOTTOM

IMPROVED LINER PACKER AND SETTING TOOL.

W-K-M

PATENT APPLIED FOR

Sets with entire weight of drill stem on packer;

Not necessary to lift up from the bottom before releasing —that guarantees a perfect seat of the set-shoe;

All RIGHT-HAND operations;

Driller knows definitely when setting tool releases and exactly how much packer expands;

Set nipple not slotted but left solid;

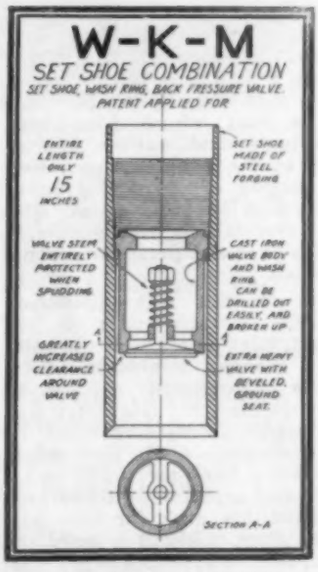
Sets with solid collar and no dogs;

Inside diameter of packer same as inside diameter of pipe below;

Full string can be used from top to bottom of well without reducing at packer;

Lead seal can be used on top of set nipple without reducing diameter;

Many other exclusive features.


W-K-M
SET SHOE COMBINATION
SET SHOE, WASH RING, BACK PRESSURE VALVE.
PATENT APPLIED FOR
ENTIRE LENGTH ONLY 15 INCHES
SET SHOE MADE OF STEEL FORGING
VALVE STEM ENTIRELY PROTECTED WHEN SPUDDING
CAST IRON VALVE BODY AND WASH RING CAN BE DRILLED OUT EASILY AND BROKEN UP.
GREATLY INCREASED CLEARANCE AROUND VALVE
EXTRA HEAVY VALVE WITH BEVELED, GROUND SEAT.
Section A-A

Save twenty-six inches of oil sand by using a W-K-M Set Shoe Combination. Let us tell you how.

EXCLUSIVE SPECIALTIES

W-K-M PATENTED ROTARY SLIPS
W-K-M ROTARY TOOL JOINTS
W-K-M PACKERS FOR ALL PURPOSES
HILL-KROHN PATENTED BREAK-OUT TONGS
HILL-KROHN PATENTED CHAIN BACK-UP TONGS
W-K-M POLISH ROD CLAMP
W-K-M COMBINATION RELEASING AND JAR-DOWN SPEARS
W-K-M STANDING VALVES
W-K-M SET-SHOE COMBINATION
W-K-M WALKING BEAM ATTACHMENT
W-K-M FISH TAIL BITS AND DRILL COLLARS

EMSCO SCREEN SET FAST

WRITE FOR DESCRIPTIVE FOLDERS AND PRICES

W-K-M COMPANY, Inc.

HOUSTON, TEXAS, U. S. A.

DISTRIBUTED THROUGH OIL FIELD SUPPLY HOUSES

PERSONAL MENTION—MEN YOU KNOW

W. L. Childs, general sales manager for the Boykin Machinery Company made a short business trip to Shreveport last week.

Dr. E. C. Gilbert, general manager of the Chapman Valve Company is visiting the Houston office this week.

J. W. Bowen, Houston District representative for the Guiberson Corporation, has returned to Houston from Laredo and Mirando City.

H. C. Gerwig of the National Tube Company of Pittsburgh and James F. Hunter of the Oil Well Supply Company of Pittsburgh are in the Mid-Continent field sizing up business conditions in the oil country.

M. G. Ensinger, western representative of the American Cable Company, completed last week a trip through Northern Oklahoma.

R. S. Levering in charge of the Rex Machinery and Supply Company in Southern Oklahoma, was in Tulsa last week conferring with F. E. Bernsen of the same organization.

J. H. Hudson, drilling contractor of Ardmore, Oklahoma, is making Tulsa his headquarters for the next few days.

Paul S. Reed, Mid-Continent representative of the DeLaval Separator Company, is in New York conferring with company officials at headquarters.

F. W. Dye, secretary-treasurer of the Western Supply Company of Tulsa, is in Battle Creek, Michigan, in the interest of his health.

A. L. Haase of Tulsa has been elected president and general manager of the McCree Petroleum Corporation.

E. J. and J. F. McCarthy, drillin contractors of St. Paul, Minnesota, are in the Mid-Continent field looking over conditions.

L. A. Parsons, manager of the Merrill Company in Houston, is in Mexico City on business.

A. I. Brainard, manager of the Frick-Reid Supply Company at Houston, made a short business trip to Beaumont this week.

S. E. Monroe, superintendent of Houston district sales for the Texas Company is making a business trip to West Texas.

Oscar C. Beavers connected with Beavers-Way, drilling contractors at Corsicana, is visiting in Houston this week.

H. D. Cornell, vice president and sales manager of the Western Supply Company, is leaving Tulsa next week for a three weeks' stay in Florida.

Joe H. Thompson, secretary to the manager of the production department of The Texas Company, was married to Miss Inetha Fink, on January 10, at Yoakum, Texas. Following the ceremony the couple left for Galveston and started on a honeymoon trip to Key West, Havana, Cuba and Miami. The officials and employees of the production department presented Mr. Thompson with a beautiful flat silver service. Mr. and Mrs. Thompson will make their home in Houston.

THOMAS A. O'DONNELL,
Who was recently for the third time re-elected president of the American Petroleum Institute. Mr. O'Donnell makes his home in California, where he has considerable interest in the production and development of the state's oil resources

W. S. Fitzpatrick, chairman of the board of the Prairie Oil and Gas Company, has returned to Independence, Kansas, after a visit to New York and other eastern points.

William L. Bowie, vice president of the Central Commercial Oil Company, has returned to the Mid-Continent after an extended visit to Washington and New York.

A. B. Patterson of the producing department in the Denver district of The Texas Company, has returned to Denver after a 10 days' visit in Houston.

W. E. Guidry, connected with the New York office of The Texas Company, visited in Houston for a few days while en route to Port Lavaca.

Ed J. Drake, Houston manager for the Continental Supply Company is visiting Shreveport and El Dorado.

R. C. Kingston, sales manager for the Mechanical Rubber Goods Company of New York, and Ben Howell, assistant sales manager, are visiting in Houston this week.

Mr. Bell of the Guiberson Corporation has returned to Dallas after spending several weeks in Houston.

T. F. Scannell, district manager of the Chain Belt Company, is away from his office in St. Louis on a tour through the Mid-Continent field.

W. C. Morgan, Mid-Continent representative of the Hughes Tool Company, is down looking over the territory in the Stroud, Oklahoma, area.

W. C. Meeks of the Bridgeport Machine Company of Wichita, Kansas, was in Oklahoma last week in connection with company business.

Charles White of Oblong, Illinois who was fatally burned at an oil well fire near Webb, Oklahoma, last week, died in Tulsa January 11.

W. W. Fleming, vice president of the Mid-Kansas Oil and Gas Company with headquarters in Tulsa, was in North Texas last week on a business trip.

Al Brown, pioneer citizen of Tulsa and well known oil operator in the Mid-Continent and other sections, died in Tulsa January 9 following a protracted illness.

J. M. DePuy is president of the recently organized Central Commercial Oil Company with headquarters in Tulsa. He formerly was vice president and head of the land department of the Wolverine Oil Company.

HOWARD R. HUGHES

(Continued from page 99)

large, but his greatest pleasure seemed to be in being liberal with it.

To me, who knew Mr. Hughes personally, and who respected and loved him, he has left in Houston a monument that will always be an inspiration—the huge manufacturing plant which bears his name and which grew from simply an idea—an idea developed by a man who had the faith and the stamina to see it through.

After all it isn't the estate nor the fame that a man leaves behind that counts. It's the friends who stand over the open grave with bowed heads and compressed lips and with a choking in the throat that prevents words.

Howard Hughes was that kind of a man.

The Houston Production Co. says:

"In drilling our Barngrover well No. 11, in the Hull field, Liberty County, we had to take extraordinary precautions due to enormous gas pressure.

"We used your heavy C. I. W. Blowout Preventer on this well and found it eminently satisfactory.

"We recommend this Blowout Preventer very highly."

Signed
Geo. L. Noble, Jr.,
Sec.-Treasurer.

The

C. I. W.

Blow-Out Preventer

—Insures Safety at Small Cost

With the body and screw made of steel, and the rams and heads of highest grade grey iron, the C. I. W. Blowout Preventer has the exceptional strength required to guarantee safety.

Contains no gaskets, flanges, lead, babbitt, or bolts to break or give way under pressure.

Tested and guaranteed to hold
2000 lbs. clear cold water pressure

Made to fit onto 6, 6⅝, 8 and 10 inch casing.

Write for information and prices.

Cameron Iron Works

HOUSTON TEXAS

FIELD NOTES AND PRODUCTION STATISTICS

New and Deeper Sand for Compton, California

General Petroleum finds very rich pay 1000 feet deeper than in first well in newest field

Los Angeles, Calif., Jan. 12.—The General Petroleum Corporation has cemented casing at 4855 feet in its Gardena 1 at Compton, Los Angeles Basin's newest field, and it is reported that ten feet of very rich sand has already been uncovered. This means an entirely new and deeper sand for Compton where the Union Oil Company's Callender test found the pay a few feet below 3800 feet and started the field off with a discovery well making almost 1500 barrels initial.

It is expected the General Petroleum will drill out next week and a test will soon prove the worth of the new find. Several of the ten wells drilling in the new field had shut down when they failed to find the pay at a depth around 3800 feet, but since the finding of the deeper pay by the General Petroleum, they have resumed drilling and will go below 4850 feet without further idleness.

Those who have seen the sand from the General Petroleum's test say it is very rich and it is freely predicted that it will be prolific, but so far it is not known what the gravity of the oil is. The Union Oil Company's second test, very near the first well, is in the oil sand and has cemented casing. It should be a completion in another week or ten days, giving the field two producers.

Renewed interest centered in Torrance the past week, due to the completion of several new wells and the action of the Shell's Keystone test, more than half a mile to the east of the Standard's Dominguez producer. The Shell's wildcat set liner and has about 170 feet of slotted pipe in the hole with a total depth of 3810 feet, slightly deeper than most of the other wells in the main part of the field. The well was swabbed and there was no "kick," at least not sufficient to make it flow. Fifteen gravity oil has been bailed and it is proposed to place it on the pump. This indicates that it is an edge well, since the production in the liveliest part of the field is around 25 gravity, but it also indicates that production can be expected between it and the Standard's eastern outpost well.

Another New Field Near

In the Bandini district, the Oakridge Oil Company's test has cemented 4 3-4 inch at 4669 feet and the oil sand is said to run from 4672 to 4730 feet. The sand is reported to be very rich and those who have examined it expect great things of the well. The well is about midway between Santa Fe Springs and the old Montebello field, four or five miles from nearest production. Storage tanks have been erected on the location and gas trap is in place, all ready for drilling out of the cement early in the week. There seems to be no doubt of the well proving a new field

(Continued on page 105)

CALIFORNIA FIELD OPERATIONS

The following table from statistics compiled by State Oil and Gas Supervisor R. D. Bush for California for the past several weeks gives a true insight into field activities:

Month ending—	New wells started	Water shutoff tests	Deepening jobs	No. wells aband.
*June	120	195	59	22
July	94	145	46	23
*August	96	141	41	26
Sept.	122	194	39	36
Week ending:				
October 6	24	28	10	9
October 13	26	36	8	4
October 20	23	33	10	7
October 27	41	34	10	5
November 3	23	37	15	1
November 10	17	37	11	10
November 17	32	45	7	5
November 24	28	32	15	7
December 1	18	41	7	9
December 8	15	44	5	10
December 15	26	32	10	5
December 22	23	36	5	1
December 29	23	28	10	7
January 5	34	22	18	3

*Five weeks in month.

Imports of Petroleum at Principal United States Ports

The following figures represent the total imports of crude oil for the month with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
August	717,000	728,845	2,264,000	661,866	1,291,000	5,662,611	987,000	861,190	1,594,000	157,000	3,599,190	9,261,801
September	774,000	739,814	2,551,701	657,964	845,201	5,237,680	1,099,000	1,159,531	748,000	150,000	2,956,531	8,194,211
October	616,769	555,803	1,339,150	524,558	870,020	3,907,066	1,159,000	1,008,440	1,614,000	99,000	3,880,440	7,787,506
November	692,000	472,465	1,933,263	728,490	849,428	4,676,527	1,305,000	889,751	1,046,000	74,000	3,314,751	7,991,278
December	774,825	693,120	2,606,130	713,565	1,901,498	5,874,917	1,530,000	847,241	828,000	80,000	3,285,241	9,160,158
January	475,000	745,115	1,636,020	641,096	1,163,120	4,760,155	1,053,000	733,284	1,182,654	40,000	3,011,953	7,772,108
February	421,000	553,510	1,163,971	570,329	1,150,819	3,859,429	1,079,000	951,818	1,019,000	167,000	3,216,818	7,076,247
March	265,000	450,000	2,020,139	848,000	1,406,577	5,045,924	1,857,000	1,611,794	1,453,000	240,000	5,162,794	10,208,718
April	370,000	669,000	1,074,000	625,000	591,000	3,319,000	1,615,000	1,020,000	1,135,000	168,000	4,362,500	7,681,500
May	344,000	315,000	1,026,000	437,000	615,000	2,937,000	1,351,000	910,000	1,184,000	127,000	3,582,000	6,519,000
June	314,000	421,000	1,791,000	755,000	809,000	4,090,000	1,515,000	1,142,000	1,062,000	229,000	3,948,000	8,038,000
July	287,000	465,000	1,806,000	448,000	898,000	3,876,000	1,471,000	1,120,000	833,000	92,000	3,516,000	7,392,000
September	268,000	565,000	1,744,000	660,000	686,000	3,923,000	1,776,000	1,397,000	880,000	224,000	4,277,000	8,202,000
October	365,000	292,000	1,194,000	536,000	816,000	3,203,000	988,000	1,330,000	380,000	50,000	2,248,000	5,951,000
November	223,000	395,000	1,194,000	576,000	757,000	3,145,000	1,478,000	1,000,000	551,000	111,000	3,287,000	5,432,000
December	474,000	574,000	1,243,000	606,000	1,024,000	3,917,000	2,019,000	1,832,000	933,000	259,000	5,043,000	8,960,000
January 5	160,000	214,000	273,000	142,000	183,000	972,000	303,000	437,000	325,000	.....	1,065,000	2,037,000

NOTE—Figures by American Petroleum Institute.

Receipts of California Oil at Atlantic Coast Ports

The following shows the receipts of California oil at Atlantic Coast ports by months with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at all Ports
March	442,000	184,000	1,355,000	496,000	615,000	2,691,000	.....	.....	.....	.....	.....	2,691,000
April	105,000	256,000	2,456,000	502,000	320,000	3,639,000	.....	478,000	.....	.....	478,000	4,117,000
May	444,000	72,000	1,259,000	764,000	964,000	3,553,000	.....	300,000	53,000	.....	353,000	3,906,000
June	821,000	160,000	3,206,000	826,000	808,000	5,821,000	.....	664,000	.....	.....	664,000	6,485,000
July	443,000	75,000	2,068,000	741,000	699,000	4,080,000	.....	559,000	.....	.....	559,000	4,639,000
August	329,000	229,000	2,956,000	836,000	683,000	5,033,000	.....	970,000	70,000	.....	1,040,000	6,073,000
September	1,028,000	237,000	2,581,000	621,000	443,000	4,910,000	.....	703,000	.....	.....	703,000	5,613,000
October	779,000	224,000	2,303,000	779,000	429,000	4,714,000	.....	746,000	.....	.....	746,000	5,460,000
November	591,000	155,000	2,302,000	584,000	271,000	3,903,000	.....	935,000	.....	.....	935,000	4,838,000
December	454,000	215,000	2,901,000	813,000	753,000	5,136,000	.....	729,000	.....	.....	729,000	5,213,000
January	253,000	.....	613,000	150,000	345,000	1,361,000	.....	70,000	.....	.....	70,000	1,431,000

NOTE—Figures by American Petroleum Institute.

Average Daily Production for all U. S. Fields

Oklahoma

	This Week	Last Week
Burbank	66,680	69,936
Bristow	50,200	50,250
Cushing	25,400	25,100
Osage (outside Burbank)	24,050	24,000
Okmulgee	22,550	22,500
Hewitt	20,800	20,800
Wewoka	11,400	10,415
Tonkawa	40,460	42,520
Healdton	12,850	12,800
Duncan and Walters	6,950	6,900
Other fields	84,200	84,100
Totals	365,540	369,321

Kansas

Eldorado	16,950	17,000
Greenwood	13,400	13,100
Elbing and Peabody	10,200	10,250
Fox-Bush	6,300	6,300
Blankensmith	3,540	3,600
Augusta and Douglas	3,460	3,500
Florence and Covert	2,870	3,000
Leon and Weaver	1,300	1,350
Other fields	9,870	9,950
Totals	67,890	68,050

Louisiana

Haynesville	21,225	21,800
Caddo	10,040	10,325
Homer	8,115	8,900
Bellevue	5,400	5,675
Vinton	5,380	5,310
Bull Bayou	5,600	5,675
Elm Grove	1,010	1,035
Evangeline	645	635
Edgerly	382	390
Anse La Butte	15	10
Totals	57,812	59,755

Arkansas

Smackover	94,440	96,720
El Dorado	15,340	15,600
Stephens	3,015	3,060
Totals	112,795	115,380

California

	This Week	Prod. Wells	Prev. Week
Long Beach	232,000	321	228,750
Santa Fe Springs	150,400	293	160,000
Huntington Beach	65,200	238	66,200
Torrance	35,000	110	34,500
Compton	1,300	1	1,300
Others	220,900		209,550
Totals	704,800		700,300

Los Angeles Shipments of Oil Show Small Decrease

Los Angeles, Calif., Jan. 12.—Twenty-seven tankers left Los Angeles Harbor during the week ending January 11, carrying 1,725,219 barrels of crude, 108,000 barrels of fuel oil, 149,253 barrels of gasoline and 55,253 barrels of kerosene. All of the gasoline went to Atlantic ports, while all of the kerosene and fuel oil went to Pacific Coast points.

The week's tabulation follows:

	Last Week	Prev. Week
Tankers departed	27	30
Total crude	1,725,219	1,868,981
Total fuel oil	108,000	257,560
Total gasoline	149,253	65,000
Crude to Pacific	475,307	530,996
Fuel to Pacific	.....	90,474
Gasoline to Pacific	.....	65,000
Crude to Atlantic	1,137,912	1,170,608
Crude to Foreign	112,000	167,377
Fuel to foreign	108,000	167,086
Kerosene, foreign	55,233	.....

Texas

NORTH CENTRAL

	Past Week	Previous Week
Corsicana-Powell	91,385	88,992
Mexia	36,390	37,000
Burkburnett	20,660	20,960
Stephens County	20,710	21,965
Electra	18,295	20,155
Archer County-Holliday	18,945	19,575
Desdemona - Gorman - Pioneer	7,805	7,770
Ranger-Eastland	7,375	7,075
Young County	4,620	4,490
Currie	4,000	3,940
Moran-Shackelford County	3,570	3,765
K-M-A	1,330	1,355
Strawn-Palo Pinto County	1,095	1,020
Mitchell County	855	870
Iowa Park	915	900
Petrolia-Clay County	375	395
Brown County	355	355
Carson County	295	240
Coleman County	140	145
Reagan County	160	155
Richland	115	130
Thrall-Williamson County	55	60
Jack County	30	35
Totals	239,060	241,342

GULF COAST

Hull	19,450	17,500
West Columbia	13,775	14,400
Goose Creek	13,372	13,150
Orange	11,872	10,500
Humble	5,275	5,780
Sour Lake	4,800	5,100
Saratoga	1,645	1,650
Damon Mound	1,642	1,810
Batson	1,074	1,155
Spindle Top	865	875
Pierce Junction	775	680
Blue Ridge	710	705
Barbers Hill	270	300
Nacogdoches	105	110
Markham	100	100
Dayton	65	60
Stratton Ridge	50	70
High Island	35	30
Big Hill	25	40
Hockley	5	...
Richmond	...	...
Total for Gulf Coast	75,910	74,025
Total North Texas	239,060	241,342
Luling (Caldwell County)	5,700	5,700
Mirando	6,000	6,000
Somerset	3,040	3,000
Rockdale-Minerva	475	475
Total for Texas	330,185	330,542

Condensed U. S. Production for Twelve Months

(Stated in Barrels)

This table is carried each week by The OIL WEEKLY, and shows daily production average for each state or section. Figures for Oklahoma, Kansas, Texas, Louisiana, Arkansas and Mountain States are compiled by The OIL WEEKLY, while estimates for California and Eastern States are furnished by the American Petroleum Institute.

Daily average for month	*Mid-Continent	North Central Texas	Texas Coastal	†Texas Total	Kansas	Okla.	Louisiana	Eastern States	Wyoming-Montana	Calif.	Ark.	U. S. Total
August	726,981	217,208	105,966	323,148	89,998	419,775	97,936	120,750	83,938	375,000	28,834	1,618,765
September	716,107	207,467	107,790	314,932	89,760	418,880	101,857	114,200	80,490	387,000	33,135	1,340,371
October	714,906	200,465	115,130	316,370	90,404	424,037	97,502	116,375	86,412	423,750	34,127	1,489,005
November	711,521	199,223	114,150	388,376	91,098	421,200	93,410	116,375	106,092	450,000	77,225	1,668,776
December	692,702	170,187	111,819	242,010	87,508	435,007	86,513	114,900	108,679	484,000	107,732	1,722,349
January (1923)	708,372	184,885	115,628	304,790	86,720	436,767	81,205	113,500	123,254	517,500	111,920	1,770,645
February	712,007	180,364	96,984	286,493	85,298	446,345	78,068	112,500	110,328	587,500	101, 346	1,805,496
March	720,287	184,582	89,873	283,355	86,012	449,693	75,352	109,900	118,580	653,000	108,630	1,888,522
April	756,381	192,148	92,320	293,780	86,133	478,100	76,854	424,000	127,860	711,250	102,099	1,983,026
May	793,774	203,776	90,905	304,032	85,500	504,498	75,368	109,125	125,680	700,125	109,033	2,010,840
June	824,297	217,162	92,240	320,250	85,255	521,880	72,745	110,300	129,559	773,000	133,592	2,159,818
July	866,665	274,330	91,795	378,335	84,785	508,405	70,085	113,000	137,300	851,000	132,395	2,275,305
August	826,982	278,374	94,398	393,780	82,741	464,416	68,739	112,625	137,909	866,250	123,000	2,251,966
September	830,517	371,730	93,649	443,461	77,078	421 763	68,935	108,400	157,742	85[illegible] 700	127,955	2,269,176
October	876,059	408,036	84,120	511,483	71,362	371,657	65,305	107,750	139,912	823,125	125,145	2,240,741
November	935,975	479,383	82,747	580,700	69,337	387,253	64,701	108,125	151,225	768,275	124,188	2,253,806
December 1	840,055	383,505	81,520	484,075	68,630	387,920	63,040	109,500	148,600	746,350	121,405	2,129,520
December 8	743,575	293,015	79,280	391,070	68,485	382,075	63,380	109,000	145,000	725,500	118,745	2,003,255
December 15	711,120	265,110	77,700	361,560	68,400	377,610	61,260	111,000	147,250	708,350	120,130	1,955,560
December 22	679,790	239,905	77,540	332,445	68,400	371,485	59,178	111,000	147,500	718,525	120,215	1,928,748
December 29	673,415	234,115	74,125	323,240	68,308	370,995	58,835	111,000	145,500	720,500	119,750	1,918,125
January 5	678,713	241,342	74,025	330,542	68,050	369,321	59,755	108,000	139,350	700,300	115,380	1,890,698
January 12	672,490	239,060	75,910	330,185	67,890	365,540	57,812	109,000	151,600	704,800	112,795	1,899,622

*Includes North-Central Texas, Kansas, Oklahoma.
†Beginning February, 1923, Somerset, Mirando, Rockdale and Luling production included.
NOTE—Mexia production included in North Central Texas.

(Completions for the Past Week on Page 114)

New and Deeper Sand For Compton, California

(Continued from page 103)

and for that reason there has been much activity in leasing circles, until there is practically no land left for lease.

Rideout Heights

The O'Donnell well No. 6 at Rideout Heights very near the town of Whittier and in the vicinity of several small wells completed about four years ago is producing around 1000 barrels of slightly better than 32 gravity oil. It was thought at first the well would be killed and refinished, but it has been decided to let it flow in present condition until it quits. Four and one-half inch is set at 4250 feet and there is ten feet of shale and two feet of oil sand at the bottom of the hole, below the casing. Storage tanks are being erected to permit opening up of well to its full flow.

Well No. 7 was shut down some time ago at 3000 feet to wait on results on No. 6, and now work is to be resumed at once. Location has been made for Nos. 8 and 9. Southern California quit work on its No. 1 Anderson about two years ago, and are now preparing to go back into the hole and drill it to the 4250 foot level. Several other wells are to be drilled in this district, but so far none of them have started up.

Watching El Segundo Well

There is much interest in the Pan American's wildcat test at El Segundo where a depth of close to 3700 feet has been reached. Rumors are numerous that the Pan American has run into some kind of pay, but no information is being given out and there is little known of actual conditions at the well. the rumors of oil showings are repeated in inner circles with much confidence.

The Standard the past week placed its No. 99 at Coyote Hills on the pump and it is making around 150 barrels of about 20 gravity oil, with some water. When the well clears up it is expected the gravity will be better. This well has proved a hard problem to handle and late last year it flowed at one time as much as 500 barrels a day, but water broke in and it became necessary to recement.

Dull in Most Fields

The past week was rather dull in most of the older fields and the list of completions was slim. Wells going on the pump at Santa Fe Springs are discouraging in the amount of oil being pumped and the same seems to be true at Huntington Beach. Long Beach had a fair week with a slight increase in production. Due to the number of new wells in the past two weeks Torrance shows a slight increase. Santa Fe Springs was off about 10,000 barrels a day.

Reports of premiums being paid for crude oil continues, with considerable basis for the rumors. This week, C. C. Julian bought the output of the Big Bear well at Long Beach, paying a five cent premium. A ten cent premium was named in a Torrance contract, as previously mentioned. A number of independent buyers are trying to buy free oil and in some instances have offered as high as 20 cents premium, but with no takers. Production in California is mostly controlled by the larger buyers and there is little opporunity for independent buyers to get a chance at anything.

Reports of continued boosts in crude prices in the east and Mid-Continent are having a great effect in this section and a boost here would not be a great surprise.

INDIANA OFFICIALS VISIT PRODUCING PROPERTIES

Tulsa, Okla., Jan. 16.—Attended by F. H. Wickett, president of the Dixie Oil Company, members of the board of directors and officials of the Standard Oil Company (Indiana) from Chicago have just completed a tour of inspection of the Wewoka field in Seminole County, Oklahoma, where the company's subsidiary, the Dixie Oil, has considerable holdings. The directors and officials left the first of the week for Louisiana, where they will inspect the Dixie Oil Company's holdings there.

The party was headed by Col. Robert W. Stewart, chairman of the board, and included E. J. Bullock, R. H. McElroy, E. G. Seubert, Beaumont Parks and J. A. Clark.

Chicago, Ill., Jan. 16.—R. E. Clark has been appointed assistant secretary and assistant treasurer of the Standard Oil Company (Indiana), succeeding S S. Gano, retired.

TO SELL COLORADO LEASES

Denver, Colo., Jan. 14.—A sale of oil and gas leases on the Ute Indian reservation at Durango, Colorado, is to be held this spring, according to information received from the United States Interior Department.

The curse of Sucker Rods that break

NECESSITY, mother of invention, is also the godmother of subsequent improvements. There were sucker rods before there were Axelson Rods.

More than three years ago a certain big oil company—and you may have the name on application—used just sucker rods. Their field men were harrassed by crystalization, frequent breaks, great loss of production.

Eventually they orderd 5,000 feet of Axelson Rods for test purposes.

Today they have in use in one field only, more than six carloads of Axelson Sucker Rods. To use their own words, "Every Rod paid for itself within three months." They do not break.

This same company has many pumping powers equipped with Axelson Surface Rods. Read their own words, written in grateful acknowledgement of unusual service:

"Not one of these Axelson Surface Rods has ever broken or caused any trouble."

There are Field Men so constantly worried by breaking rods that they do not believe there is any freedom from this trouble. To all such men we suggest that they do what others have done: Order a sufficient number of Axelson Rods for test purposes only. For as Plautus put it, "One eye-witness weighs more than ten hearsays. Seeing is believing, all the world over."

In Oil Field Equipment—the Most HUMAN Organization in America.

Frick-Reid Supply Co.

Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi—Stores Everywhere

Decide to Complete Burbank Drilling Wells

Estimated that production will go to 120,000 barrels with completion of wells now on sand

Tulsa, Okla., Jan. 15.—At their meeting held in this city on January 10, the operators of the Burbank pool agreed to open up the field and allow all drilling wells to be completed.

Just what will be the result of the partial abolishment of the shut down plan is yet to be seen. Some think that Oklahoma will again take her place as a state of overproduction, while others are of the opinion that the opening up of this area will be a good thing for the state. The resumption of drilling will give employment to hundreds of oil field workers in Osage and Kay counties, which means that an era of prosperity should be in full swing before many weeks have passed. In commenting on the altering of the shut down plan Mr. E. R. Perry, chairman of the committee, has the following to say:

"The Burbank shut down was admirably carried on, but production in the country is such now, and the demand for high gravity oil so keen that the Burbank operators feel that they should be allowed to complete their wells that have so long been shut down. The resumption of drilling will afford work for thousands of workers and will help restore prosperity to the Tulsa district.

"It is true that the Burbank output, now around 70,000 barrels, will be greatly increased by the completion of the new wells now so near the pay sand, but as soon as these are in, the completion of other Burbank wells will be slow and regular. In my opinion the Burbank production will never go above 110,000 barrels a day, unless the increases come from acreage yet to be offered for sale by the Osage agency."

In part, the vote of the committee means the following to the Burbank activities: All wells situated on the line in Kay County extension can now be drilled in; all inside locations on each 160 acres are to be kept shut down for another 30 days. At their meeting which is to be held February 8 it is possible that the inside wells will be allowed to be drilled in.

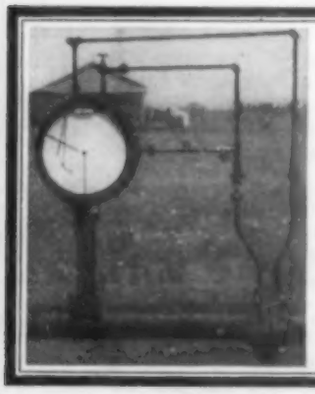
At the time of meeting there were 50 wells on top of the sand at Burbank, 20 new wells under derrick, which will be drilled to the sand as soon as possible, and about 75 locations rigging up.

Companies represented at the meeting and operators in the Burbank pool are as follows: The Phillips Petroleum Company, Mid-Kansas Oil and Gas Company, Delmar Oil Company, Sinclair Oil and Gas Company, Comar Oil Company, Dye, Tomlinson & Danciger, Pure Oil Company, Skelly Oil Company, Cosden Oil and Gas Company, The Texas Company, Roxana Petroleum Company, Alcorn Oil and Prairie Oil and Gas Company. Each of these companies voted to open the field while the Gypsy Oil Company, represented by Mr. Henry McGraw, vice president and general manager, was bitterly opposed to the idea.

Since the abrogation of the shutdown plan, Burbank has been experiencing a whirlwind rush of completions. Over the last week end five new wells have been completed. The Phillips Petroleum Company and Delmar Oil Company No. 1 at the southeast corner of section 10-27-5, in Osage County, came in making about 3000 barrels of oil from a sand at 3093 feet; the Sinclair Oil and Gas Company No. 8 is on the sand and will be drilled in shortly. This well is an offset to the Phillips well and is in the northwest corner of section 15-27-5. The Phillips Petroleum Company have drilled in four wells since the 10th of the month, as follows: No. 13 at the northwest corner of section 23-27-5 is making 1200 barrels; No. 16 at the northeast corner of the same quarter is making about the same amount as No. 13; No. 5 at the northeast corner of the southwest of the northwest of section 23-27-5 is making about 1000 barrels daily; No. 9 at the southwest corner of the northwest of the same section is flowing 50 barrels per hour from a sand at 4035 feet.

The Carter Oil Company well No. 10 is making about 1200 barrels of oil per day. The well is located at the northeast corner of section 22-27-5.

The Burbank shutdown plan was first inaugurated in June, 1923, at which time the operators decided on it for the reason of overproduction in Oklahoma and a general slump in the price of crude oil. Each month since its inception the operators have met here to determine whether it should remain closed for another 30 days and the lid has been on since that date. February 8th may see the complete abrogation of the shutdown plan for Burbank. Oklahoma oil operators are waiting anxiously to see the result of throwing the Burbank production of 120,000 barrels on the market.



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Oil Field Supply Dept.
KANSAS CITY HAY PRESS COMPANY
Kansas City, Mo.

Western Part of Kansas Getting Attention As Operations Are Resumed After Freeze

Wichita, Kans., Jan. 16.—The oil fields of Kansas are again thawed out and drilling operations are in progress after being shut down for over a week on account of the intense cold.

For the past week it might be said that the western part of the state is receiving the most attention. Since the successful completion of the Valerius wildcat in Russell County, the major companies have been attracted to that locality. The Valerius well will be deepened shortly according to reports received here. When this is done and a true test of the well is made, it is more than likely that the district will start on an extensive drilling rampage.

About 15 locations are already scheduled for the Eastman district of Cowley County, many of which have built rigs over them. Deal and Collins will deepen their gas well which is located in the northwest corner of the southwest of the northwest of section 8-31-6. This well has been producing about 8,000,000 feet of gas for some time. It is about a quarter of a mile south of the Wilson & Martin well which came in a week ago for a flow of 260 barrels of oil per day. These same people are building a rig to offset the Wilson & Martin well. The White Eagle Oil and Refining Company has erected tanks in the Eastman district and has also built a two inch pipe line to the Frisco loading rack, which is a little more than a mile north of the Wilson & Martin well.

The Waite Phillips and Independent Oil and Gas Company well in the Oxford district is holding up an average of 300 barrels per day. This is the L. H. Johnson No. 1 well and it is producing from the sand at 3209 feet.

In the Greenwood pool, the White Eagle Oil and Refining Company well, known as the Edwards No. 1, is flowing about 215 barrels of oil per day. The well is located in the southwest corner of the northeast of section 13-23-10, Greenwood County. Bason et al report a completion for the Greenwood pool of 175 barrels of oil each 24 hours. This well is located in the northeast corner of section 14-24-9, and is known as the Agard No. 1.

An offset to the big Wetschensky well in the Newton field, known as the Wetschensky No. 2 of the Newton Oil Corporation, is reported as a dry hole by the officials of the company. The well will be made into a deep test for this field and will probably be drilled to 3500 feet. The Wetschensky No. 1 came in the first of November with a natural flow of 13 barrels per hour and was the best well ever brought in in Marion County.

Rotary equipment will be installed on the H. C. Cooper wildcat to be drilled in Stafford County, 17 miles west of Sterling. The location for the well will be in the northwest corner of the southeast of section 23-21-11 and the rig is already on the ground.

In Hamilton and Greely Counties, the Carter Oil Company is blocking acreage. These two counties are in the extreme western part of the state, on the Colorado line. It is more than likely that several tests will be made of the acreage after leasing is complete.

Oklahoma Production Decline Halted by Burbank Revision and Other Activities

Tulsa, Okla., Jan. 16.—The decline in production in Oklahoma has been brought to a standstill for a week on account of the partial abrogation of the Burbank shutdown plan. The figures for last week continue to show a decline, but with 50 wells on the sand at the time of the discontinuance of the plan, the pool will start on steady march to higher production figures.

Completions for the week in Oklahoma show above the average in producing wells. Almost every district reports a well of some kind. More locations are being made than usual. Oklahoma is starting off the new year with optimistic spirit and will aim to do her share of the nation's output of crude oil.

The Wewoka field is awake again and work is going forward after being partly shut down for some time. The Sinclair and Independent companies' Foster 2 in the northeast of the southwest of the northwest of section 38-8-8 is reported to be making about 1800 barrels of oil per day from a sand at 3160 feet. The Dixie Oil Company well in the northeast of the northwest of section 32-8-8, an offset to the Magnolia Bob well, is making oil by heads over the top of the derrick. The Dixie No. 2 on the Harris farm in the southwest of the northwest of the northeast of section 32-8-8 is reported to be flowing oil by heads. The Lucy Long well of the Dixie Oil Company is flowing by heads. This well is located in the northwest of the southwest of section 33-8-8 and is producing from a sand at the 3300-foot level. In the southeast corner of the southwest of the southeast of section 25-8-8 the new Dixie gasser threatens to completely ruin the water used in the city of Wewoka. The oil and gas is running into Wewoka Creek, from which the city water is obtained.

Preparations are now being made by T. B. Slick to lay a gas line from his well in section 25-6-6 in Southern Seminole County to the town of Sasakwa. The Slick well came in about three weeks ago with a flow of ten million feet of gas per day. A large consignment of pipe is on the sidetrack at Sasakwa awaiting the order of Mr. Slick to start the line.

The Papoose Oil Company well in Hughes County has been cleaned out and at the present time is making about 210 barrels of oil per day, or an increase of almost a hundred barrels over the previous production figures.

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Central Archer County Most Active and Prolific Oil Area in Central West Texas

Wichita Falls, Texas, Jan. 15.—The 1600 foot sand pay in the Wilmot-Wilson pool in North Central Archer County is the most prolific oil producing horizon now being developed in the North and Central West Texas district, and is leading all fields in actual developments, with unusually large flush production coming from the Jetter section of the pool. During the past week Murchison & Fain's L. F. Wilson 5-B swabbed at the rate of 1000 barrels of oil daily from broken sand at 1585-1593 feet and 1594-1599 feet, while on an adjoining lease J. E. Dale and others' L. F. Wilson 2 swabbed 700 barrels of oil in 18 hours from broken sand at 1583-1594 feet and 1595-1600 feet. Several important extensions were made to this pool during the past week, indicating that the trend of production is to the east, northeast and southeast, and covering a large portion of the Luke Wilson ranch.

The productive limits of the Wilmot-Wilson pool were widened to the southeast late last week when the Panhandle Refining Company's W. F. Parrish 1 filled with oil after drilling into sand pay at 1598 feet. In the vicinity of the wildcat producer completed several months ago by Barkley & Meadows on the Wilson ranch, the White Oil Corporation's L. F. Wilson 1 is preparing to test out a sand at 1541-1548 feet. Barkley & Meadows' test drilled to the south of its discovery well failed to make a producer after drilling to 1904 feet.

Four new producers were reported during the past week from the Mitchell shallow pool, located in the P. Castleman survey, near Big Wichita River in Wichita County. The largest completion was Ross & Fields' T. F. Mitchell 4, which is estimated good for 25 barrels daily at 426-35 feet. In the Shappell area, along the Wichita and Archer County line, Gilliland & Scott's W. H. Chilson 1 is reported standardizing to pump with the hole full of oil after drilling one foot of sand to 1817 feet. This well is a northwest offset to the Shappell Oil Company's producer on the Jackson lease, and directly west of the Panhandle Refining Company's Shaw & Rathke 1, which is showing considerable water with only a small amount of oil production after plugging back from 1822 to 1819 feet.

A 5,000,000 cubic foot gasser from a shallow producing horizon is reported in the wildcat test being drilled by McCan and others on the Ray lease in the east part of Throckmorton County. The gas production is reported to be coming from the top of a sand encountered at 844 feet. This county was reported last week as having registered its first oil producer good for 10 barrels at 942 feet.

The Gulf Production Company has abandoned its two deep tests on the C. B. Hockaday lease, Bunger district, in Young County. One of the tests was drilled to 4110 feet with only a small showing of oil, while the other was given up as a junked hole at 3305 feet.

Luling Operations Quiet; Prepare for Active Spring

Luling, Texas, Jan. 14.—Chief interest during the week centered in the spudding in of the United North and South Oil Company's No. 1 Allen in Guadalupe County north of the No. 1 Lopez and on what is believed to be a location higher on the structure. Some operators hold the opinion that the Lopez well was an edge well just below the main faulting and that the Allen test will get much larger production. Acreage has been blocked up for more than a mile around it.

J. K. Hughes Development Company is reported to have closed an $18,000 deal for acreage in that vicinity during the week. M. K. Towns and C. G. Jacobs are reported to have purchased thirty acres out of the Allen tract also.

Magnolia Petroleum Company completed No. 3 Nathan Byrd for 500 barrels during the week bringing the well in at 2114 feet. The No. 3 Clara Byrd was also completed during the week for similar production at 2138 feet. Both of these wells are above the water and no trouble is anticipated in that respect.

Drilling operations are not active as the companies are still pinching in their wells and holding down production pending better markets. The United North and South and several other companies are building warehouses and making other field improvements in anticipation of heavier work during the spring and summer.

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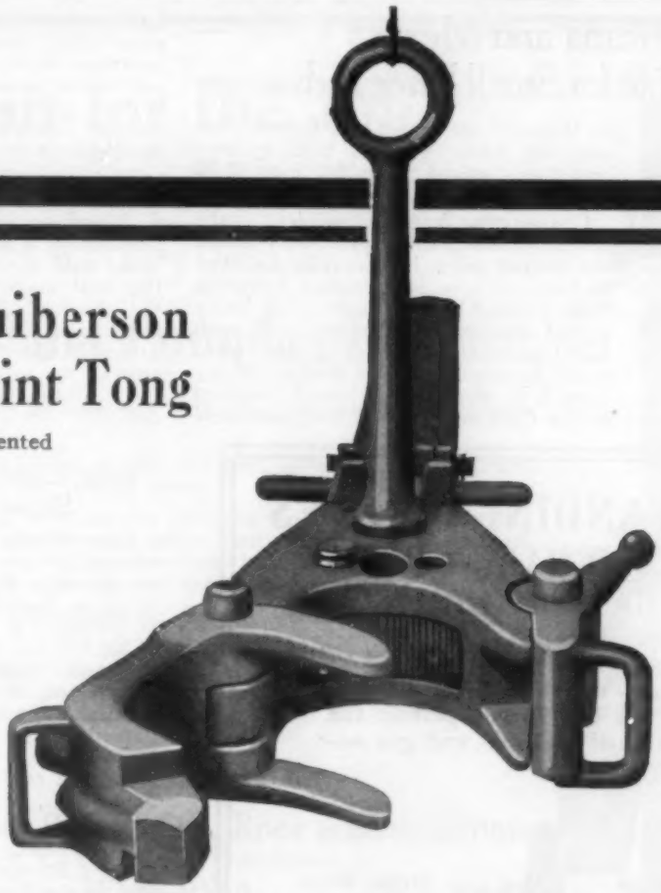

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Active Demand for Corsicana and Mexia Oil Responsible for Small Price Advances

Corsicana, Texas, Jan. 15.—The posted price on crudes produced in the Corsicana-Powell and Mexia fields was equalized with present prices applying on the same grades of oil in the Mid-Continent district January 14, when the Humble and Texas Pipe Line companies posted an increase of five cents per barrel, making the price $1.40 per barrel, or the same as that being paid in the Mid-Continent for 36 to 38.9 gravity. This increase is the second given the East Central Texas fields in less than a week, as a general advance of 10 cents per barrel was posted January 10, while Currie's high gravity crude was raised from $1.35 to $1.50 per barrel.

Competition from independent crude buyers offering small premiums above the posted price is generally believed to have been a contributing factor in East Central Texas district oil being placed on an equal price level with Mid-Continent. These independent crude buyers have been freely offering from 5 to 10 cents per barrel premium in the Corsicana-Powell field, and have lately invaded the Mexia field with the same offer, resulting in a number of contracts being made, while during the past week Garland C. Kent is reported to have contracted to sell 200,000 barrels of Corsicana-Powell crude to an independent refiner on the coast.

The semi-wildcat test of McDonald Brothers on the Dr. Brown lease in the Richland section of Navarro County, resulted in a number of nearby leases being sold during the past week when the well made several heads up into the derrick. This well is producing from a sand at 2964 feet, and is to be drilled deeper to determine the importance of the producing horizon, while in the meantime several offsets are to be drilled.

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Texas Light Oil Stocks Show Decline January 1

Fort Worth, Texas, Jan. 14.—An inventory of crude stocks held by producers, pipe line companies, and refiners in North and Central Texas as of January 1, 1924, shows a total of 44,501,125 barrels, of which virtually the entire amount is classed as high gravity oil. The Corsicana-Powell and Mexia district is credited with 29,567,125 barrels, while the North and Central West Texas district's crude stocks amounted to 14,934,000 barrels on this date.

Although the Corsicana-Powell and Mexia district has registered large increases during the past six months owing to the flush from the former field, the North and Central West Texas district reports a reduction in crude stocks for the past two months, after having reached a peak level for the year 1923 on the first of November with a total of 15,465,000 barrels.

The table below shows the total crude stocks in the North and Central West Texas district, but not including Mexia and Corsicana-Powell district, for the past six months:

	Barrels
August 1	15,230,000
September 1	14,915,000
October 1	14,815,000
November 1	15,465,000
December 1	15,238,000
January 1	14,934,000

Work Over Revives New Production for Eastland

Fort Worth, Texas, Jan. 15.—Deepening of the Mid-Kansas Oil and Gas Company's C. J. Harrell 5 during the past week furnished the first new production of any importance for Eastland County in more than a month, as the well flowed at the rate of 300 barrels daily after drilling into sand pay at 3580 to 3584 feet. This well was completed early last October making 2,000,000 cubic feet of gas at 3545 feet, and is located on the east edge of the lease in W. Willis survey, about seven miles north and slightly east of Eastland.

The shallow producing horizon in the northeast corner of the William Van Norman survey, Eastland County, added two flowing wells last week when the Panhandle Refining Company's L. A. Hightower 8 made 130 barrels at 1192 feet, and No. 9 on the same lease flowed 145 barrels at 1190 feet.

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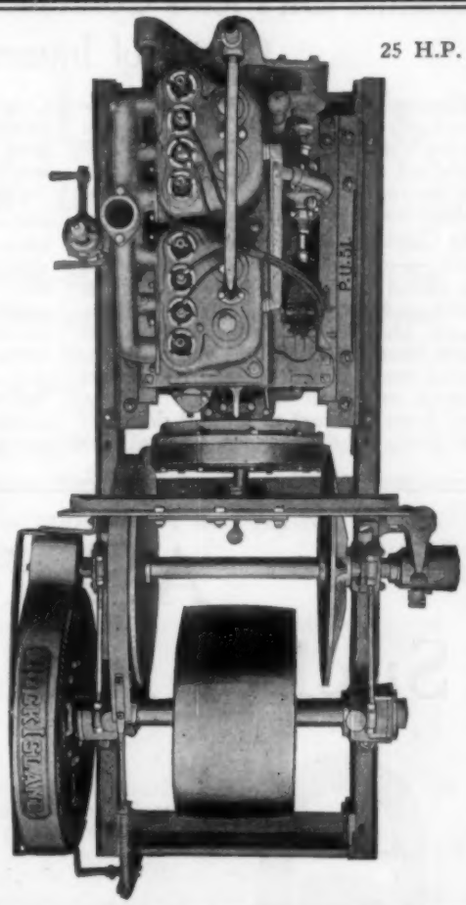

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Potential Oil Fields Continue to Hold Center of Interest in North Louisiana

Shreveport, La., Jan. 14.—Reports received last week from Oakland and Cotton Valley, Louisiana's two new potential oil fields, continued of uncertain tone as regards the former and of optimistic tenor as regards the latter.

At Oakland, some discouragement is felt over the unsuccessful outcome of the Green test, drilled by Palmer & Davidson in section 19-23-1 east, Union Parish, about a mile southwest of the Clark discovery wells. This well penetrated more than 100 feet of sand, but showed only salt water. It is now shut down for fuel at a total depth of 2447 feet. The Arkansas Natural Gas Company's Templeton well, a southern offset to this test, is said to have been shut down as a result of its poor showing.

The Frost-Johnson well, drilled by Palmer & Davidson in the southeast corner of the northeast quarter of the southwest quarter of section 18-23-1 east, about three-quarters of a mile northwest of their Green failure and about one mile southwest of the Clark wells, was pumped again last Wednesday. It made only salt water during the first two hours of operation; but thereafter it pumped 33 gravity oil accompanied by about 15 per cent of salt water and one per cent of sediment. A gauge of its oil production indicated an hourly rate of about seven barrels. The well is now shut in awaiting the arrival of steel tanks.

The Roxana Petroleum Company has begun drilling and is down below 400 feet in its No. 1 Smith, in section 30-22-2 west; and the Ohio Oil Company has set surface casing at 103 feet in its test being drilled on the Dubach Lumber Company's land in section 15-20-1 west, near Farmerville. J. A. Noe et al are drilling below 1120 feet in their Gulley wildcat, in section 36-21-1 east.

Cotton Valley

The test of the Merritt well, drilled by the Oil Fields Gas Company on a lease owned by the Louisiana Oil Refining Corporation in section 14-21-10, Webster Parish, has been continued throughout the week. A new type of separator has been installed; and the well is now blowing through it into earthen storage, the two steel tanks having been filled. This well has been yielding from 50 to 75 barrels of pipe line oil per day throughout the test. P. T. Mize, general superintendent of production, visited the well today in company with other officials of the Louisiana company, but just what the Louisiana company's plan of action is to be in this territory is not yet known or indicated.

The Oil Fields Gas Company has drilled the plug and bailed the casing dry in its Hope well, located in the northwest corner of the northeast quarter of the southwest quarter of section 13-21-10, which is the next test on the docket in this area. It is located about three-eighths of a mile southeast of the Webb discovery well, mentioned above. The Fortuna Oil Company has begun drilling and set surface casing at 210 feet in its Stratton well, in the southeast corner of the northwest quarter of the southeast quarter of section 31-22-10.

R. A. Smith and others have let a contract to Green Smitherman for a well to be drilled in section 21-23-11, near Spring Hill. This location lies directly between two previous tests which showed oil in non-commercial quantities.

Palmer & Blount are setting liner to make a test at 1030 feet in their Anders wildcat, in section 6-18-10, of Webster Parish, which probably is located on the southeast slope of the Bellevue structure. Previous tests in this same locality have shown oil at about this same level.

The Arkansas Fuel Company is moving in a rig to begin operations on the derrick built some time ago by Smith and others on the Lena Harrell tract, in section 6-18-5, about one mile north of Arcadia, in Bienville Parish.

Terrell et al are coring into the top of the Nacatoch horizon at 1086 feet in their Porter operation, located in section 22-12-13, of De Soto Parish. This test lies about half a mile south of the Texas Pacific Coal and Oil Company's Roscoe gasser, one of the comparatively recent developments in the Mansfield area.

Bartlesville, Okla., Jan. 15.—Stocks of crude oil held by the Empire at the first of this year totaled 2,735,805.48 barrels, while deliveries were 889,026.14 barrels and receipts 752,384.90 barrels.

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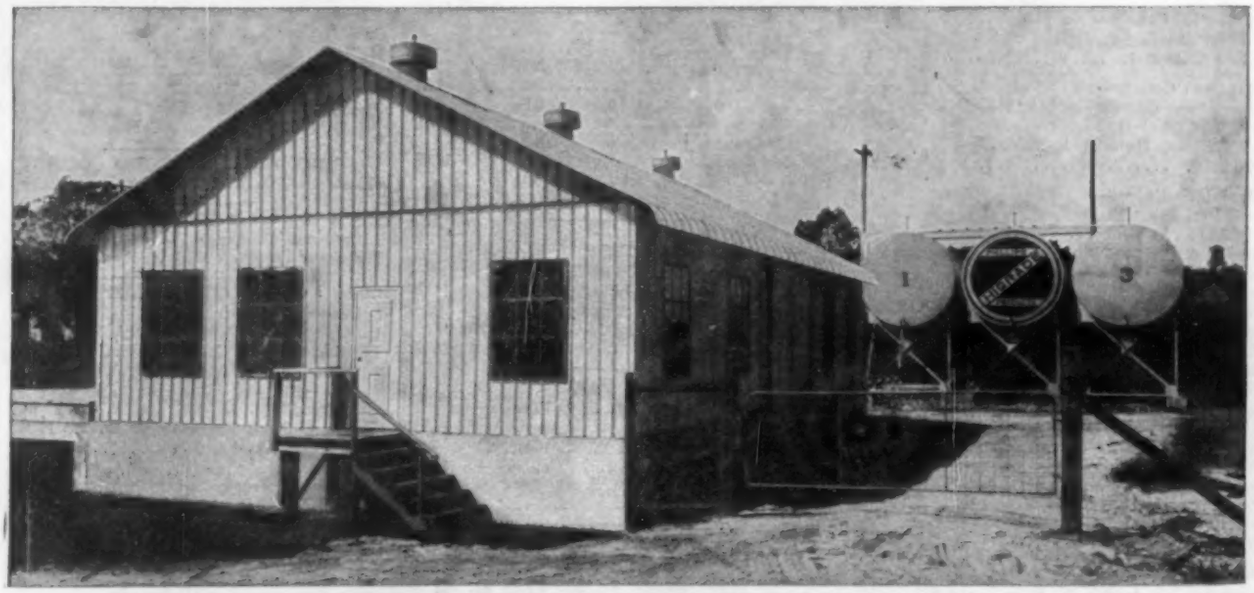

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Completions for Past Week in U. S. Fields

Oklahoma

Company, Well, Location	Initial Production Bbls.	Depth
Carter County—		
Amster Dolman 1, C NE NE SE 25-2-3w	420	2371
Cotton Belt Oil Co. Ellis 5, C SE NW NW 30-2-2w	150	2475
Magnolia Pet. Co. Smith 1, SWc 24-2-3w	*	1810
L. J. Woodruff Farland 1, C SE SE 7-3-3w	*	3250
C. R. Smith Fee 1, C SE SE NE 6-3-2w	100	2685
Creek County—		
H. C. Wilson Bucktrot 2, C E L NW NW 35-17-10	¶	2338
Kay County—		
Ostot & Poling U. S. Smelter Co. 1 NWc NE SW 15-27-1w	50	3474
Anolu Oil Co. Barr 1, NEc 16-27-1w	¶	3450
McIntosh County—		
H. & H. Oil Co. S. Ireland 5, SWc NE SE 27-11-15	10	1154
Okfuskee County—		
Phillips Pet. Co. Fields 14, C E L SW NE 24-11-11	*	2703
Link Oil Co. Holotha 1, NWc NE 18-11-9	*	3980
Okmulgee County—		
Black Pet. Co. Harjo 2, SEc NW 34-12-11	*	2691
Spangler & Presser Norton 2, C W L SW SW 31-13-12	20	2510
Ohio-Okla Oil Co. Thomas 1, SWc NE NW 32-13-11	*	3717
Denver P. & R. Co. Verson 7, C E L NW NE 31-13-11	*	2635
Texolean Oil Co. Culp 2, SEc SW NW NE 14-15-12	¶	1857
Sheridan Soule 1, SWc NW SW 28-15-11	*	2800
Walford et al Grayson 2, NWc NE SW 3-15-11	15	2000
Transcontinental Grayson 14, NWc SE SW 1-15-11	*	3210
McCullough et al Brown 1, SEc SW SW 17-16-13	*	2340
Osage County—		
Gypsy Oil Co. 1, NE SE 22-27-5	385	2982
Texas Co. 2, C E L NE 29-25-8	¶	1114
Mutual Oil Co. 1, NE SE 32-24-8	20	695
Munn Bros. 2, NE SE NE 28-20-12	200	2070
Pawnee County—		
Tidal Oil Co. Hamilton 10, SWc NW SW NE 24-20-8	400	2758
S. W. Oil Fields Corp. Watson 9, C N L SE 24-20-8	150	2774
Magnolia Pet. Co. Baker 6, NWc 16-20-6	120	3072
Cosden O. & G. Co. Phillips 1, NEc SE NW 17-21-6	*	3460
Seminole County—		
Independent Foster 2, NEc SW NW 33-8-8	1250	3160
Dixie Oil Co. Chas. Foster 1, SWc 28-8-	450	3143
Roxana 1, NEc SE SW SE 25-8-7	¶	2704
Stephens County—		
Magnolia Pet. Co. Morgan 7 "A", NWc SE SE 32-1-8w	¶	2247
Johnson 4, NEc SE NW SW 18-1-8w	50	1973
F. Wilson 4, SEc SW SE 17-2-7w	50	1371
F. Wilson 3, NWc SW SW SE 17-2-7w	1	1402
Tulsa County—		
Titus et al Johnson 1, NWc NW SE NE 10-19-20	40	1730
Elliott & Sons Bruner 1, NWc SW 16-18-13	8	1160
Flesher Pet. Co. Wray 2, NWc NW SW 35-19-13	*	1555
S. S. Home Strip 1, SWc SW SW NE 6-19-12	45	2248
Waggoner County—		
Zack Barnes Sarty 1, NWc SW 32-17-16	¶	1240
Osage County—		
Gypsy Oil Co. 11, SE 22-27-5	800	2966
12, NE 22-27-5	960	3036
9, NE 22-27-5	480	3007
14 NW 24-27-5	552	2995
Tidal Osage 34, wo, NW 34-22-10	3960	2315

Kansas

Company, Well and Location	Initial Production Bbls.	Depth
Cowley County—		
Gypsy Oil Co. Joslin 2, C S L SW SW 11-30-4	20	2803
Elk County—		
Junker et al Barnes 1, SWc SW NE 6-29-9	*	1770
Greenwood County—		
White Eagle Edwards 1, SWc NE 13-23-10	215	2127
Mission Oil Co. Thrall 1-B, NEc 27-23-10	30	2347
Bason et al Agard 1, NWc SE NW 14-24-9	175	2168
Deering-Marshall et al Duke 1, SEc 22-26-9	25	2291
J. B. Regal et al Aley 1, NEc 26-26-1w	*	3230
Curtis & Curtis Colborn 1, SWc NW 33-25-14	*	2406

Texas

BURKBURNETT

Company, Well, Location	Initial Production Bbls.	Depth
Baldwin Bros. Kennedy 12-C	*	1850
Gulf Production Co. Saunders Est. 1	25	1850
Magnolia Pet. Co. M. J. Owens 17	8	1652

ELECTRA

Company, Well, Location	Initial Production Bbls.	Depth
Stump Oil & Gas Co. J. & J. Waggoner 1	*	1610
Texhoma Oil & Ref. Co. W. T. Waggoner 12-F	40	1826
Madison Oil & Gas Co. S. B. Burnett 10	*	500

ARCHER COUNTY

Company, Well, Location	Initial Production Bbls.	Depth
J. E. Dale et al L. F. Wilson 2	700	1600
L. F. Wilson 3	250	1600
L. F. Wilson-Johnson 2-C	225	1605
L. F. Wilson-Johnson 3-C	275	1604
Dixon & Meadows J. H. White 1	*	1670
P. F. Gwynn et al Mrs. J. H. Carter 1	75	1380
Maer & Stniforth et al L. F. Wilson 3	125	1606
J. J. Perkins et al Mrs. J. E. Parrish 1	*	1680
Sixty Six Oil Co. L. F. Wilson 7-B	300	1590
Underwood Drlg. Co. H. Wilmut 4	40	1602
R. J. Williams et al L. F. Wilson 1	*	1825
Murchison & Fain L. F. Wilson 3-B	200	1589
L. F. Wilson 5-B	1000	1599
Staley & Wynne A. P. Nichols 1	*	1850
Sunshine State O. & R. Co. Carter Bros. 14	45	1585
Mrs. J. E. Parrish 2	25	1589
Wilson Farm Oil Co. L. F. Wilson 3	100	1608
L. F. Wilson 4	100	1600

YOUNG COUNTY

Company, Well, Location	Initial Production Bbls.	Depth
Gulf Prod. Co. C. B. Hockaday 2	*	3305
C. B. Hockaday 1-A	*	4110
Lindsey et al's Costello Bros. 1	30	1585
Seaboard-Simmons J. W. Hughes 4	40	2360
B. F. Weekly J. A. McLaren 3	*	2630

RANGER-EASTLAND

Company, Well, Location	Initial Production Bbls.	Depth
Donley Bros. Brelsford 1	*	1295
Mid-Kansas Oil & Gas Co. Harrell 5-DD	300	3584
Panhandle Ref. Co. L. A. Hightower 8	130	1192
L. A. Hightower 9	145	1190
Prairie O. & G. Co. C. C. Brooks 5-A	70	2530
Root et al J. T. Walker 1	*	3500
Root, Rhoades & Sykes Carter 4	*	3665
Turner & Clayton Steele 1	25	3340

STEPHENS COUNTY

Company, Well, Location	Initial Production Bbls.	Depth
Moore et al Douglas 3	*	3595
Roxana Pet. Corp. Ball 3	*	3565
Ball 4	*	3385
Texas Pacific Coal & Oil Co. W. R. Ashmore 3	*	2170

IOWA PARK AND K-M-A

Company, Well, Location	Initial Production Bbls.	Depth
Comac Oil Co. T. E. Terhune 1	*	2000
P. B. Cox T. F. Mitchell 1	15	434
Eureka Drlg. Co. T. F. Mitchell 1	10	432
Jaffee & Griswold T. F. Mitchell 3	10	447
Ross & Fields T. F. Mitchell 4	25	435

MIRANDO

Company, Well, Location	Initial Production Bbls.	Depth
Webb County—		
Magnolia Oil Co. 17	25	1712
Carolina-Texas Oil Co. 4	¶	....
Howard & Clark Puig 1	20	....

CORSICANA-POWELL

Company, Well, Location	Initial Production Bbls.	Depth
Simms Oil Co. J. A. Boyd 4	100	2970
J. T. Rose 8	300	2943

IBEX (SHACKELFORD COUNTY)

Company, Well, Location	Initial Production Bbls.	Depth
Humble Oil & Ref. Co. Jackson 1	15	3570

LULING

Company, Well, Location	Initial Production Bbls.	Depth
Caldwell County—		
Magnolia Oil Co. Nathan Byrd 3	500	....

GULF COAST

Company, Well, Location	Initial Production Bbls.	Depth
Goose Creek—		
Gulf Prod. Co. Paddock-Smith 8	100	2570
Humble O. & R. Co. Simms-Smith 53	140	2510
Hull—		
Gulf Prod. Co. D. J. Harrison 5A	60	3125
Republic Prod. Co. Dolbear 26 wo	1500	2320
Texas Co. Hannah 1 wo	200	2950
Orange—		
Mutual Oil Co.'s Chesson 6, wo	1000	4170
Orange Pet. Co. Berwick 3, wo	50	3430
Gulf Prod Co. Chesson 4, wo	30	3540

California

TORRANCE

Company, Well, Location	Initial Production Bbls.	Depth
C. C. Julian Mueller 3	500	3691
Cook Drilling Co. 2	600	3788
Fred B. Foster 66	500	3660
Geo. F. Getty 12	1000	3791
Sentonel Oil Co. Martin 1	160	3758
Federal Drilling Co.'s Hindman 2	300	3754
Universal Cons. Moore 4	1000	3765
Van Allen 1	900	3780
C. C. M. Oil Co. 2	385	3775
Petroleum Midway Webster Com. 1	670	3750

LONG BEACH

Company, Well, Location	Initial Production Bbls.	Depth
Shell Fee 2	800	4876
Shell Marcellus 1 (wo)	65	3345
General Pet. 2A	540	4970
Bona Fide Oil Co.'s White 1A	4000	4967
Henderson Pet. Synd. Hoover 2	800	4500
Big Bear Oil Co. 1	1000	4305
Rice Ranch Oil Co.'s Augustine 4	230	3611

SANTA FE SPRINGS

Company, Well, Location	Initial Production Bbls.	Depth
Associated Clark 12	60	4672
Butterworth 2A (wo)	60	5065
Standard Weisel 11	300	4611

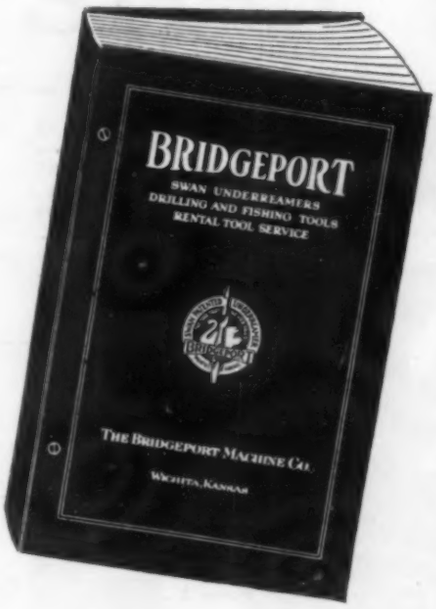
HUNTINGTON BEACH

Company, Well, Location	Initial Production Bbls.	Depth
Shell Davenport 3 (wo)	50	3725
Sun Oil Co. Pointon 6	550	3568
M. H. Mosier O'Donnell 2 (wo)	125	4717
Associated 6, (wo)	20	4405
Holly Oil Co. 3 (wo)	65	4863
Bush Voorhis 1	2500	4800

COYOTE HILLS

Company, Well, Location	Initial Production Bbls.	Depth
Standard 99	150	4750

A Catalog of a Hundred Field-Proved Tools



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2. **Drilling and Fishing Tools.**
3. **Rental Tool Service.**

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Be sure in giving your name to include your full address.

THE BRIDGEPORT MACHINE COMPANY

General Offices and Works WICHITA, KANSAS

Arkansas

Company, Well Location—	Initial Production Barrels	Depth
Stephens Field, Columbia County—		
Tate & Turley's Milner 4, 24-15-20	65	2160
Smackover Field, Ouachita County—		
Altofore et al McElroy 2, 29-15-16.	125	2311
Clark et al Berry 4, 24-15-17.....	100	2300
El Dorado Union Oil Co. Sherley 3, 30-15-16	150	2285
Hughes 3, 28-15-16	75	2260
Gulf Ref. Co. Patton 1, 31-15-16....	100	2260
Hunt et al Solmson 3, 30-15-16.....	100	2273
Lewis & Clark's Berry 4, 24-15-17..	100	2298
Magnolia Pet. Co. Smith 3, 31-15-16	80	2250
McAdoo Oil Co. Metrix 3, 30-15-16..	*	2325
Meyer Trust Fee 3 30-15-16.....	125	2296
Sure Oil Co. Fee 2, 30-15-16.....	150	2265
Smith Refining Co. Patton 3, 31-15-16	250	2275
Texas Co. Chandler 1, 30-15-16.....	160	2295
Chandler 2, 30-15-16, ...	160	2289
Solmson B-1, 32-15-16	90	2250
V. K. F. Drlg. Co. Patton 3, 32-15-16	115	2260
Smackover Field, Union County—		
Crawford & Sebastian James 5, 6-16-15	¶30	2270
Del-Ark Prod. Co. Alphin 1, 10-16-15	300	2010
Humble O. & R. Co. Goodwin B-2, 3-16-15	100	1975
Murphy 4, 14-16-15 1200		1998
Higgins O. & F. Co. Jameson 3, 2-16-15	150	2070
Lion Oil & Refining Co. Billieu 2, 8-16-15	100	2094
Natural Gas & Petroleum Co. Houston 1, 12-16-15	¶20	2365
Page et al's Alphin 2, 23-16-15.....	50	1995
Pure Oil Co. Craig 3, 15-16-15.....	60	2055
Roxana Pet. Co. Wells 4, 15-16-15..	80	2012
Sun Co. Hays 4, 3-16-15.....	75	1985
Tarver et al Childs 1, 8-16-16.....	100	2260
Total, 28 wells .....¶50-4095		

Louisiana

Company, Well, Location	Initial Production Bbls.	Depth
Bellevue Field, Bossier Parish—		
R. O. Roy & Co. Scanlan 26, 15-19-11	50	367
Standard Oil Co. Bliss & Weathebee 4, 10-19-11	15	365
Total, 2 wells	65	
Monroe Gas Field, Morehouse Parish—		
McKenzie Synd. Perry 2, 13-20-4e..	¶10	2200
Monroe Gas Field, Ouachita Parish—		
Peerless Carbon Co. Fee 2, 28-19-5e..	¶10	2260
Total, 2 wells	¶20	

Eastern States

PENNSYLVANIA

Bradford Field—		
South Penn Oil Co. Bingham 400 tract 1	10	....
Bingham 402 tract 1	3	....
Bingham 150 tract 46.....	¶½	....
Bingham 475 tract 47	2	....
Bingham 576 tract 84	3	....
Bingham 576 tract 85	8	....
Fee 26	3	....
Fee 27	7	....
Fee 28	7	....
Forest Oil Co. Porter 2	4	....
Noble 2	3	....
South Penn Oil Co. Rounds 39.....	5	....
Riddle 30	8	....
Leasure 1	4	....
Buchanan 1	7	....
Associated Prod. Co. Bingham 184 tract 257	¶½	....
Hazlewood Oil Co. Bingham 370, tract 1	7	....
M. E. Boyle Duke 1	10	....
Butler County—		
Bird & Haney Walls 1	15	....
Denny & Co. Sasse 2	8	....
J. S. Walker Snow 1	5	....
Elliott & Co. Duncan 2	3	....
Donaldson & Co. Graham 1	*	....
Lang & Co. Fennell 1 .....¶1½		....
Shields & Co. McLafferty 1	¶2	....
Venango County—		
O. Bronson Brummigan 67	12	....
E. Siederman Hanson 44	5	....
S. Y. Ramage Stiles 63	2	....
Stiles 64	3	....
N. F. Hovis & Co. Welton 1	2	....
Oil Well Supply Co. Cranford 103..	¶½	....
Clarion County—		
Shorts Oil Co. Shorts 1	2	....
Kettering 1	*	....
Alum Rock Gas Co. Amsler 4	2	....
Graham 6	¶2	....
Whitling 10	¶2	....
Natural Gasoline Co. Kahle 1	¶2	....
Allegheny County—		
American Natural Gas Co. Frank Wells 1	¶4	....
Forest County—		
United Nat. Gas Co. Clapp 3694..	¶1	....
Beaver County—		
Harbison & Co. Downey Hrs. 1	¶2	....

NEW YORK

Allegany County—		
Empire Gas & Fuel Co. Empire 1 .	3	....
Empire 2	*	....
Empire 3	2	....
Empire Ltd. Empire 1	3	....
Sawyer & Co. Sawyer 1	3	....
Randall & Co. Reed 1	2	....
Burr Oil Co. Burr 1	7	....
Breckenridge & Empire Breckenridge 1	3	....
R. J. Dermitt Dermitt 1	15	....

WEST VIRGINIA

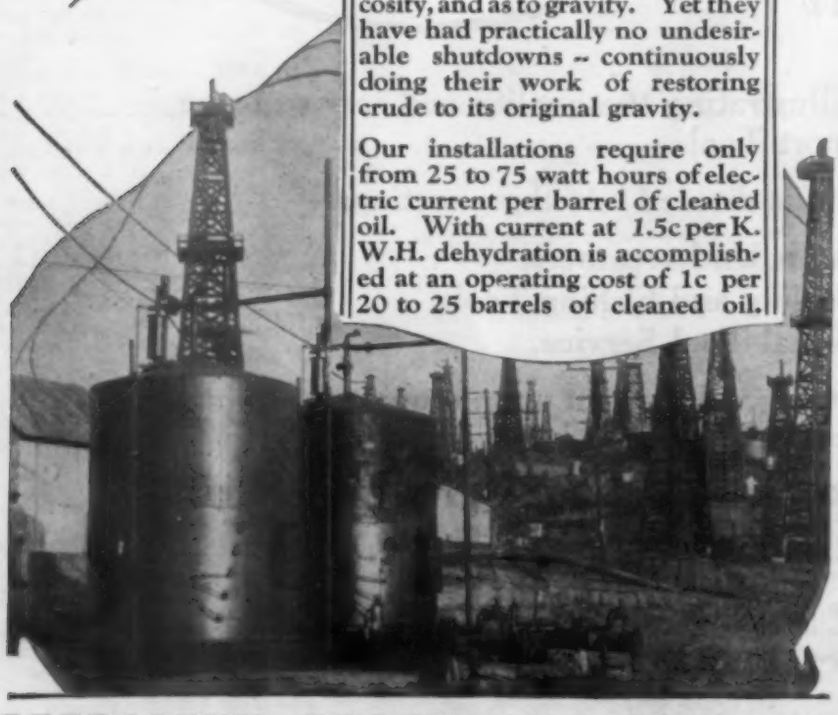
Ritchie County—		
Wright Oil & Gas Co. F. M. Stansbury 4	¶2	....

The Cost of Treating Crude Oil By Electrical Dehydration

So many of our Electrical Dehydration plants have been established during the past eight years in the oil fields of this and foreign countries that it has become possible to obtain valuable comparative costs records.

These plants operate under widely varying conditions as to emulsion and water content, as to viscosity, and as to gravity. Yet they have had practically no undesirable shutdowns -- continuously doing their work of restoring crude to its original gravity.

Our installations require only from 25 to 75 watt hours of electric current per barrel of cleaned oil. With current at 1.5c per K. W.H. dehydration is accomplished at an operating cost of 1c per 20 to 25 barrels of cleaned oil.



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STEEL Angle Arms, securely riveted to circles of Steel Cants and bolted to a Pareelite* Shaft Hub, provide a band wheel framework that eliminates the use of band wheel flanges.

Rows of standard wooden band wheel cants, staggered and nailed together, are bolted between the steel cant circles, and evenly compressed throughout the circumference of the wheel.

Parkersburg Steel Band Wheels are made in standard diameters, faced for standard width belting, and can be supplied to fit regular sizes of band wheel shafts.

PARKERSBURG Metal Tug Pulleys

bolted to the steel angle arms, are supplied as regular equipment.

The "V" grooves assure positive traction for the bull ropes. Like the tug rims on Parkersburg steel bull wheels, these tug pulleys are Pareelite.*

When desired, Parkersburg Metal Tug Pulleys are sold separate from the Steel Band Wheels, and can be applied to any standard Wooden Band Wheel.

*Pareelite is a "High Manganese" metal—not cast iron—that will sustain a load of 4320 lbs. on arbitration test bar of the American Society for Testing Materials, and with only 7/64th inch deflection at breaking point. It has an ultimate tensile strength of 33,680 lbs. per square inch.

In *elasticity* Pareelite approaches more nearly to cast steel than any other cast ferrous metal!

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Orange
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*Casper
‡Rawlins

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*Shreveport
Haynesville

KANSAS
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ARKANSAS
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McNeil

MONTANA
Sunburst
†Winnett

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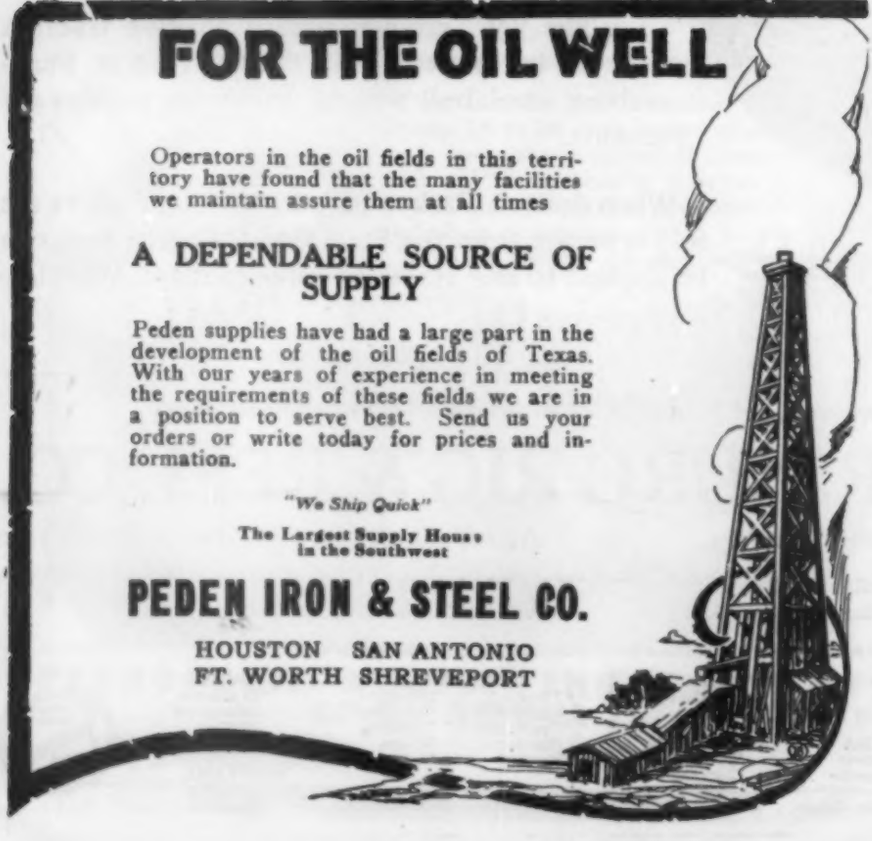

Company, Well, Location—	Initial Production Bbls.	Depth
Carter Oil Co. Willard Adams 1 ...	¶2	....
Hope Nat. Gas Co. J. W. Prather 1..	¶2	....
Starr Oil & Gas Co. J. A. Day 2..	¶2	....
Thos. Mason 1	¶2	....
South Penn Oil Co. H. A. Miller 2	¶2	....
Carnegie Nat. Gas Co. S. S. Sharp 7	¶2	....
W. P. Smith 1 . .....¶2½		....
T. Lock & Co. J. A. Hall 1	¶2	....
Lucas & Mahaney D. W. Rigs 1 ...	*	....
J. B. Yates & Co. Zach Darnell 1	*	....
Harrison County—		
Philadelphia Oil Co. Sungeg 1.....	*	....
Reserve Gas Co. Austin Post 1	25	3104
Clarksburg L. & H. Co. C. B. Morris 1 . ..... ¶½		....
Hope Cons. & Ref. Co. Mary Lading 1	¶3	....
Grasselli Chemical Co. M. Reed 1 .	¶3	....
Lincoln County—		
Rashman & Stanton H. A. Barrett 3	¶2	....
Roy & McComas G. B. Adkins 1 ...	¶2	....
Cambridge Oil Co. Adkins 1	¶2	....
Superior Oil Co. Scott Adkins 1 ...	¶2	....
G. B. Adkins 1	¶2	....
Gilmer County—		
Carnegie Nat. Gas Co. D. L. Coberly 1	¶3	....
Hope Natural Gas Co. Ella R. Despard 1	¶4	....
Philadelphia Oil Co. W. V. Gainer 1	¶3	....
G. L. Cabot A. W. Blackshere 1 ....¶3½		....
Doddridge County—		
G. B. Travis A. Draner 2	¶2	....
Trainer Bros. Kelley 1	¶2	....
Carter Oil Co. Ocho Polman 2	¶¼	....
Monongalia County—		
Owens Bottle Machine Co. French Williams 1	¶8	1997
Marshall Oil Co. D. J. Eddy 4 ...	5	3014
Roane County—		
Empire Pet. Co. O. E. Hunt 1	*	....
Taylor Bros. & Co. Wood Taylor 1	*	....
Braxton County—		
Hazel Atlas Oil Co. W. O. Priest 1..	¶4	....
Pittsburg & West Virginia Gas Co. John Burke 1	*	....
Wood County—		
Howser & Eka A. A. Brown Hrs. 1..	2	....
Calhoun County—		
Martin Crowley Pat Mitchell 1 . ....¶2½		....
Cabell County—		
Commercial Gas Co. A. Kirtley 1....	¶¼	....
Wayne County—		
Commercial Gas & Electric Co. Guyandotte 1	*	....
KENTUCKY		
Warren County—		
White & Foster Wood 1	25	550
Bannon & Stewart A. Shields 3	4	639
Plantation Cons. Oil Co. W. A. Gott 10	3	992
Jackson Oil Co. J. Jones 4	*	475
Barren County—		
Jordan & Dale Chetwood 1	8	406
Summer Valley Oil Co. Vincent 3 ..	3	610
Border & Co. Wilson 1	*	400
Lawrence-Johnson Counties—		
Indian-Tez Pet. Co. J. C. Gillem 7..	26	870
Cumberland Pet. Co. Sena Hamilton 6	10	829
Johnson-Magoffin Counties—		
Oliver Jenkins Martha Conley 11...	4	....
Hudson & Collins Horando Grace 3	4	....
Metcalf County—		
Knob Lick Oil Co. Bell 1	8	....
Bell 2	*	....
Knott County—		
Garver & Davis Jack Shepard 1 . .	¶5	....
Jack Shepard 2	¶5	....

Our Casper Warehouse

Above is shown the Rocky Mountain District Office and Warehouse of the WILLIAMSPORT WIRE ROPE COMPANY, located at Casper, Wyoming.

H. H. Wrightsman, District Manager, is shown at right; F. H. Smith, field man, is in center, and H. M. Cone, of the office staff, is at left.

Assisting this office in its work of placing WILLIAMSPORT lines within easy reach of every Rocky Mountain field, is the Montana Lumber & Hardware Company, of Lewistown and Winnett, Montana.

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Houston Graham Mildred Shidler Blackwell Ardmore Holdenville Okemah
Smackover Arkansas City El Dorado Shreveport Casper

We Give Service in Every Important Field

WILLIAMSPORT

Company, Well, Location	Initial Production Bbls.	Depth
Allen County—		
Turner & English W. L. Motley 8 ..	*	418
W. R. Wynn F. R. Wilson 18	*	410
Floyd County—		
C. A. Sears Standard Coal Co. 1 ...	¶3½	....
Cumberland County—		
Douglas St. Clair E. Baker 1	*	745

TENNESSEE

Warren County—		
Riverside Oil & Gas Co. Powell 1	*	....
Whitner & Co. Unknown 1	*	....

MISSISSIPPI

Pike County—		
Gulf Drilling Co. Cupret 1	*	....

SOUTHEASTERN OHIO

Washington County—		
J. C. Carnes & Co. Holland 1	¶2	....
S. A. Taylor & Co. Radenback Hrs. 1	2	....
James Immel Peter Spindler 7....	2	....
Otto Backer & Co. A. H. Rosenbush 3	*	....
F. W. Cochran & Co. Thos. Cochran 3	*	....
Belmont County—		
Bens Fork Oil Co. Toothman 5 ...	10	....
Payne & Co. Shephard 1	5	....
Morgan County—		
Dally & Co. C. C. Crider 3	50	....

CENTRAL OHIO

Holmes County—		
Klise-Eckstein-McCann Co. J. R. Findlay 1	*	....
J. P. Close 1	*	....
Logan Gas Co. H. G. Hoffman 1	*	....
Central Ohio Gas Co. A. W. Fenrick 1	*	....
East Ohio Gas Co. M. A. Martin 1..	*	....
Wayne County—		
Ohio Fuel Gas Co. M. S. Buckholtz 2	¶1	....
Klise-Eckstein-McCann Co. W. Redette 1	*	....
Bowers & Co. A. J. Lance 1	¶1	....
Mayers & Co. J. R. Stuckey 2	¶1	....
Hocking County—		
Logan Gas Co. George Amerine 2...	3	....
Sunday Creek Coal Co. Buckeye Coal Co. 114	27	....
Ohio Fuel Gas Co. Elias Davis 1 ...	*	....
Medina County—		
Logan Gas Co. P. Diehl 1	¶½	....
East Ohio Gas Co. Bob Richie 1 ...	*	....
Ohio Fuel Gas Co. Mary C. Pearse 1	*	....
Athens County—		
Logan Gas Co. W. & M. Dye 3....	*	....
Edward Sayer G. W. Hawk 1.....	¶½	....
D. W. James & Co. Nora Wise 1 ...	*	....
Licking County—		
Wehrle Stove Co. Anna Miller 1 ..	35	....
Carter Oil Co. O. E. Romine 2	35	....
Knox County—		
Rocky River Oil Co. M. & I. Rouse 1	¶¼	....
Heisey Gas Co. C. C. Greene 2 ..	¶¼	....
Jackson County—		
Ohio Fuel Supply Co. Minnie Stephenson 1	¶2	....
Meigs County—		
Jupiter Oil Co. Stella Holter 1	¶1	....

NORTHWESTERN OHIO

Mercer County—		
O. C. Fink Oil Synd. J. Bollenbacker 1	40	....

INDIANA

Grant County—		
Nickelson & Co. Machelwain 4	15	1100
Jay County—		
C. F. Willson & Co. Mary Grissell 4	*	1200
Sullivan County—		
H. & S. Oil & Gas Co. Albert Poe 6	*	1075

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Deep Well Drillers Honored at Corsicana

Corsicana, Texas, Jan. 14.—Officials of the Corsicana Deep Well Company, which discovered the deep pay in the Corsicana-Powell field January 7, 1923, after two unsuccessful attempts for production in the same area, were invited as honor guests to a banquet tendered by the Corsicana Chamber of Commerce to representatives of oil companies and business men to celebrate the first anniversary of the field. The banquet was given last Thursday with about 200 present, and the speakers on the program paid tribute to Henry Warren, president, Robert K. Blackshear, secretary, and other members of the Corsicana Deep Well Company, for their persistence in drilling a third hole despite the previous failures. These owners of the discovery well did not profit to any great extent by bringing in the first well, as they had disposed of nearly all their acreage to raise funds for drilling, and the prolific section of the field was later found to exist further southwest.

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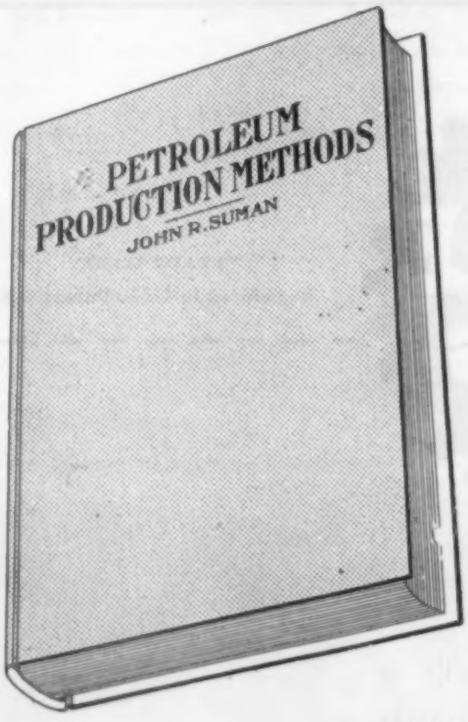

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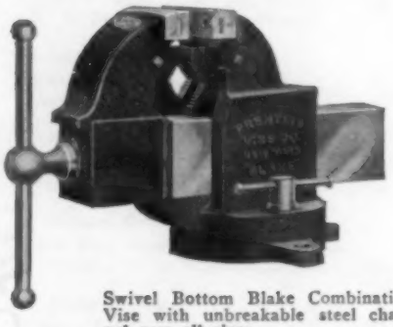

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TEXAS

Archer County—Shamrock Oil Co.'s Mrs. R. E Harbison 1, 495 ft. to W & 150 ft to N line; 2, BBB&C Ry sur blk 4. Swastika Oil Synd's N. D .Goldsmith 1 South Anderson sur blk 5 822 ft to N line. Texas Co's. J. Dormier 1, W. M Matthews sur 250 ft to N & E lines. Maer-Stanforth L. F. Wilson 1, Amer Trib sur blk 27 150 to N & W lines. Humble Oil and Ref. Co.'s W. Parrish 1, SP Ry sur No. 2 150 ft to N & W lines. Empire Gas & Fuel Co.'s L. F. Wilson 1-C, Amer Trib sur blk 29 200 ft to N & W lines. Camp Oil & Gas Co's. L. F. Wilson 5H, Amer Trib sur sec 24 150 ft to N & W lines; H. Wilmot 6, SP Ry sur blk 4 150 ft to S & W lines. Wildee Oil Co's. L. F. Wilson 2, Amer Trib sur 10t 700 300 ft E No. 1. Mrs. H. B. Wallac's Kemp & Kempner 22, SP Ry sur No. 2 300 ft E No. 14. D. H. Morgan's Mrs. J H. Turbeville 1, Robt. Carson sur 150 ft to N and E lines. American Refg Co's H & J Ward 1, TE&L Ry sur No. 1379 150 ft to S & E lines. Kimmell & Dillard's Kemp & Kempner 4, H&GN Ry sur blk 42 300 ft W No. 3. Kentucky Oil Corp's L. F. Wilson 1, Amer Trib sur sec 27 150 ft to N & E lines. P. F Gwynn's L. F. Wilson 1, Amer Trib sur blk 27 150 ft to S & W lines; 2, 150 ft to N & W. lines. D O. Johnson's L. F. Wilson 4, Amer Trib sur blk 317 448 ft S No. 3; 5, 3158 ft W No. 3; 6, 450 ft S No. 5; 7, 300 ft W No. 5; 8, 452 ft S No. 7. Harry A. Dee's C A. Mangold 1, C. A. Mangold sur blk 26 150 ft to N & E lines. Oklahoma-Mexia Oil & Gas Co.'s Mrs. N. J. Parrish 2, SP Ry sur sec 2 325 ft E No. 1. J. D. Coomb's J. H White 1, Amer Trib sur sec 34 160 ft to S & W lines.

Bexar County.—National Oil Corps T. G. Oliver 4, 150 ft to N & W lines. Gas Ridge Dev Co's. Voges 5, S. Hernandez sur 1450 ft N No. 3.

Brazoria County.—Humble Oil & Refg Co's. Damon-Smith 2, sec 32 L. Damon sur 100 ft to S & 435 ft to W line.

Bandera County.—Humble Oil & Refg Co's. G. W. Thompson 1, H. G Thompson sur 2500 ft to W & 750 ft to S line.

Brown County.—I. R. Wooley's Shelton 1, J. C. Brown sur 930 ft to W & 150 ft to N line.

Callahan County.—B. F. Robiem's A. H. Wagley 6, I&GN Ry sur No. 2970 150 ft to N & E lines. Shackelford Oil Co's. Fee 9, TE&L Ry sur No. 2270 300 ft W No. 8. Borealis Oil Co.'s Joe Nueman 5, Jas Hart sur 600 ft to N & E lines. Denny & Andrews' Mrs. R. D. Williams 9, TE&L Ry sur No. 2973 300 ft S No. 2. Godley Oil & Gas Co's. J. H. Ogle 4-B, TE&L Ry sur No. 2297 300 ft W No. 1; 7A, TE&L Ry sur No. 2300 150 ft to S & W line. Big Five Oil Co.'s Shackelford 2, TE&L Ry sur No. 2270 300 ft N No. 1. W. H. Kerbow's T. E. Haden 1, Univ Lands sur blk 124 150 ft to S & E lines. L. C. Lucas C Grisham 6, TE&L Ry sur No. 2300 150 ft to S & W lines. J. J. Mundy's M. K. Clifford 1, SP Ry sur sec 1 150 ft to S line at center.

Caldwell County—United North and South Oil Co's. W. M. Mercer 3, Jas Barry sur 300 ft S No. 1; F M. Mercer 2, Jas Barry sur 352 ft E No. 1; W. H. Tabor 6, N. Reaville sur 315 ft SE No. 5; E. J. Hardeman 6, M. G. Dykes sur 565 ft NE No. 5; T. C. Gideon 2, M. G. Dykes sur 600 ft N No. 1.

Clay County.—J. C. Hunt's Fee 7, P C S L sec 300 ft S No. 6.

Crockett County.—Mid-Kansas Oil & Gas Co's. Harris Bros 1, GC&SF Ry sur sec 20 South Central.

Eastland County.—L. C. McFall's L. G. Ross 1, McL. C. S. L. 155 ft to S & W lines. L. E. Edwards' A. J. Halloway 1, H&TC Ry sur sec 20 150 ft to N & E lines. Albon & Snyder's R. Allison 1, H&TC Ry sur sec 7 165 ft to W & 330 ft to S line. Mook Texas Oil Co's. J. C. Harrell 3, T&NO Ry sur 600 ft W No. 1; E. A. Sibley 2, Wm. Van Norman sur 200 ft to 6 & 600 ft to W line.

Fort Bend County.—Pathfinder Oil Co's. Hamman, Hollbrook & Hampil 1, P. Fairchild sur 1235 ft to E and 3800 ft to N line.

Falls County.—Seay, Cranfill & Reynolds' Chance 1, J. L. Colton sur lot 9.

Galveston County.—Sun Oil Co's. E. K. Cade 6, Fitzsimmons sur blk 25 398 ft to S & 150 ft to E line. Raymond S. Carter's High Island Great Western Oil Co. 3, M. Dunman sur 150 ft to S & E lines.

Harris County.—Humble Oil & Refg Co's. Simms-Smith 54, Wm. Scott sur 300 ft E No. 53.

Hardin County—T. G. Barkley's Mrs. Rogers 4, J. P. Wilds sur NW cor Star Oil Co's. Lyn Oil Co. 1, S. Jackson sur 50 ft to W and 138 ft to N line.

Jefferson County.—Selma Oil Co's. J. Chaison 5, Jno. Douthit sur blk 1, north central. Houston Oil Co's. W. P. McFadden 1, E L & R sur 150 ft to N & E lines.

Liberty County.—Gulf Prod Co's. E. M. Scarborough 11, I&GN Ry sur south central.

Live Oak County—Houston Oil Co's. H. Cartwright 4, J. M. Colchado sur 1200 ft NW No. 3.

Matagorda County.—Rycade Oil Corp's W. H. Gray 1, Wm. Haddon sur.

Navarro County.—Gulf Prod Co's. A. Crews 18, J. O. Harris sur 150 ft SE No. 1.

Palo Pinto County—Upham Gas Co.'s E. C. Hartnett 1, W. Williams sur 500 ft to S & E lines. Moore & Snebold's C. C. Boles 2, B. C. S. L. 375 ft to N & 330 ft to W line.

Shackelford County.—W. L. Terry's Broadfoot 3, sec 20 Bayland Asy sur 330 ft NE No. 2. J. L. Sarver's R. A. Elliott A1, sec 48 Blind Asy sur 1980 ft to W & 990 ft to S line.

Scurry County.—J. O. Gu nn's Mrs. W. O. Gardner, H&TC Ry sur blk 2 900 ft to E & 400 ft to N line.

Wichita County.—Bailey & Wiley's C. Buerbaum 1, T. E. Williams 900 ft to N & 1320 ft to W line. Eureka Drilling Co's. Mrs. S. Mitchell 2, Castleman sur 300 ft W No. 1. Hanes Oil Co's. J. A. Watkins 3, H. B. Balch sur 160 ft to E & 450 ft to S line. Kentucky Oil Corp.'s J. A. Kemp 1, D. C. S. L. sec 6 200 ft to S & E lines. Texhoma Oil & Refg Co.'s. W. N. Hamilton 2, D. C. S. L. lot 22 353 ft S No. 1. J. E. Ward's F. W. Roberts 1, sec 10 A R. Collins sur 1050 ft to N & 150 ft to E line. Perkins & Cullum's T. L. Burnett 2, SAMG Ry sur sec 5 660 ft W No. 1. Pois & Kruger's W. T. Waggoner 8, HT&B Ry sur sec 13 300 ft N No. 6. Roy I. Carter's S. B. Burnett 30, HT&B Ry sur sec 12 300 ft E No. 1. A. T. Wolfe's J. A. Kemp 8, W. V. F. L. blk 58 300 ft SE No. 6. D. M. Ross' S. Mitchell 5, P. Castleman sur 300 ft S No 4. Rowe Drilling Co's W. T. Waggoner 2, HT&B Ry sur sec 14 300 ft W No. 1. Ryan Pet Co.'s Geo. Nance 18, Fowler sur NE cor.

Webb County.—Laurel Oil Co's. Los Ojuelos 5, abst 605. E No. 3.

Young County.—Fred B. Foster Co's. G. W. MaHaney 2, E. J. Ribble sur blk 44 330 ft to N & W lines. Godley Oil & Gas Co's. M. K. Graham 2, Jas. A. Bolton sur 150 ft to S & W lines. Sinclair Oil & Gas Co's. L. P. Moren 3, Jas Rose sur 368 ft to river & 214 ft to W line.

ARKANSAS

Ouachita County—Anderson Trust's Anderson 1, 26-15-17, 200 ft N and W of SEc NW¼ NE¼. Bashara et al's Patton 2, 32-15-16, 660 ft N and 150 ft W of SEc W½ NE¼ SW¼. Gulf Ref. Co.'s Harris 2, 30-15-16, 250 ft N and 200 ft W of SEc NE¼. Houston Oil Co.'s Patton 3, 31-15-16, 200 ft S and E of NWc NE¼ SE¼. Keen & Woolf's Myar 6, 32-15-16, 330 ft N and 990 ft E of SWc NE¼ NW¼. Lewis & Clark's Berry 5, 20-15-17, 500 ft N and E of SW½ NW¼. Phillips Pet. Co.'s Joyce 3, 33-15-15, 200 ft S and W of NEc of Sec. Smith Ref. Co.'s Fee 5, 30-15-16, NWc SW¼ SE¼. Standard Oil Co.'s Solmson 4, 29-15-16, 330 ft S and W of SEc SE¼ NE¼.

Union County—Gulf Ref. Co.'s Werner 13, 32-15-16, 755 ft. N and 250 ft E of SWc SE¼. Humphries Oil Co.'s Hicks 2, 20-16-15, 200 ft S and E of NWc SW¼ NE¼.

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The manufacturers of this machine are men who have had experience in the oil fields, one of which has been in the business for 50 years, the other has made a study of pulling machines, and knows that the simplest, strongest and safest qualities is what the worker wants.

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We make no assertions that we cannot back up.

Do not take something just as good, but demand the best, a machine that you will be able to get service from the factory, direct to the supply company.

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Safety Junior, A-Mast 34 ft. 4x10 Mast Double brake, Wells up to 800 ft.

Safety Standard, A-Mast, 36 ft., 6x10 Mast Double brake, Wells to 1800 ft.

Safety Special, A-Mast, 36 ft., 7x10 Mast Double brake, Wells to 3000 ft.

We also make the Eclipse, described as follows:

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NOTE—The same timbers used in the Safety are interchangeable with the Eclipse, in fact many of the parts also are, therefore we are able to sell our machines at a reasonable profit.

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WILDCATS FROM ALL SECTIONS

North Texas Operators Watch Reagan County With Much Interest as Two Wells Near Sand

Fort Worth, Texas, Jan. 14.—With two tests nearing the producing horizon in the vicinity of the wildcat oil producer on University of Texas land in Reagan County section of West Texas, oil operators and supply houses appeared to be holding themselves in readiness early this week to secure a stronghold in this virgin section of the state in the event either of the two drilling tests fulfill expectations in being larger producers than the discovery well. The two tests, almost in striking distance of the pay level, are being drilled by the Big Lake Oil Company of Pittsburgh in the same section as the discovery well, which was acquired last November from the Texon Oil and Land Company and test known as University No. 3 is scheduled for completion late this week. The crew was engaged in running a string of five and three-sixteenths inch casing to the bottom of the hole at 2938 feet early this week, and when this work is completed it is planned to test the casing before drilling to the pay level, which was found in the discovery well at 3026 feet. This test is 1200 feet northwest of the discovery well, and 800 feet north of University No. 2, which is 800 feet due west of the oil producer. University No. 2 is reported to have successfully drilled past a string of tools and other junk at 2770 feet, and early this week was preparing to set casing.

The performance of the discovery well, which blew in May 28, after standing idle more than 24 hours, and made three flows on that day, two flows on May 29 and one flow daily from then on until placed on the pump, has attracted interest of operators in all sections of the country. The flows made by the well gradually increased in capacity until production amounted to about 100 barrels daily. The well was placed on the pump August 10, and is still holding at an average of 150 to 170 barrels of oil with some water, although the casing is leaking from above and the hole is not in the best of shape. The log of the well shows that two feet of sand pay were drilled when the well blew in, and no further effort has been made to drill deeper. This oil is 38 gravity, with a paraffin base, and tests about 30 per cent gasoline.

Drilling operations are getting under way on a large scale in Reagan and adjoining counties before the outcome of the offsets to the discovery well is determined. In addition to the number of tests proposed or already started and announced in recent issues of The OIL WEEKLY, W. H. Dunning, Jr., of Fort Worth has announced a location for a deep test to be drilled on a block of 10,000 acres on the Sawyer Cattle Company ranch in Reagan County. The test will be in the southeast corner of the southwest quarter of section 93, T. & R. Railway survey, block 1. The drilling is to be done by Dunning and Lyons, drilling contractors. A short distance to the east of the above block of leases Herb Conley and others have contracted to drill a well on 10 sections, also located on the Sawyer Cattle Company ranch. Foster Mitchell is reported to have made contract to drill a test in the southeast corner of Upton County. In Crockett County, W. E. Ball of Los Angeles has taken leases on 23 sections of the J. S. Todd ranch and made location for a test. In the same county the World Company, publishers of Fort Worth, have erected a derrick for a test on the L. P. Powell ranch.

Panhandle Wildcats Show Gas at Shallow Depths

Amarillo, Texas, Jan. 15.—Gas production from comparatively shallow depths was obtained last week by two wildcat tests drilling in the Panhandle section of Texas. The Producers and Refiners Corporation's Lee Bivins 1-B, in the southwest corner of Hutchinson County, is drilling below 1660 feet after showing good for 4,000,000 cubic feet of gas at 1650 feet. This well is in the southwest corner of section 11, T. T. Ry. Co. survey, block Y-2, and in semi-proven gas area. In Wheeler County and west of the Sayre, Oklahoma, field, the Pulaski Oil Company's wildcat test on the F. E. Sheldon ranch, section 128, H. & G. N. Railway Company survey, is reported making about 1,000,000 cubic feet of gas at 1515 feet while drilling ahead. Both of these tests are drilling for oil production.

The Magnolia Petroleum Company's wildcat test on the "J A" ranch, section 43, E. L. and Railway Company survey, Armstrong County, is to be plugged and abandoned after drilling to 3985 feet, without obtaining either oil or gas production. This well was spudded September 3, 1923, and made exceptionally good time in drilling, considering its remoteness from a railroad point. The casing record of this deep test includes: 47 feet of 20 inch; 435 feet of 15½ inch; 876 feet of 12½ inch; 1566 feet of 10 inch; 2400 feet of 8¼ inch and 3419 feet of 6⅝ inch. A heavy flow of salt water was encountered at 3950 to 3960 feet. The Magnolia Petroleum Company has drilled a number of wildcat tests in various parts of the state in the past two years, but not one single producer has been obtained to date.

Gulf Montague County Wildcat Reports Show

Wichita Falls, Texas, Jan. 14.—Interest in wildcat activity in Montague County section of North Texas broke into the limelight late last week when a showing of both oil and gas at 3270 to 3300 feet was reported in the Gulf Production Company's L. Benton 1, located several miles east of Nocona and on the so-called Nocona structure. Considerable water was being carried in the hole at the time the pay was encountered, thereby making it difficult

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to determine the importance of the discovery. Boiler trouble has delayed efforts to make a test of the pay, which is thought to be somewhat similar to that furnishing production for Gulf's wildcat oil producer on the Carl Worsham ranch in Eastern Clay County.

Louisiana Wildcats

COMPLETIONS

Company, Well, Location	Initial Production Bbls.	Depth
Union Parish—		
Clark & Woodward's Clark 1, 17-23-2e	*	2509
Emire Gas & Fuel Co.'s Hamilton 1 30-19-1e	*	3457

DRILLING REPORT

BIENVILLE PARISH—Arkansas Fuel Co.'s Harrell 1, 6-18-5, rig. Ohio Oil Co.'s Bodcau 1, 19-16-6, dr 2420 ft. Smith et al's Durrett 1, 34-18-5, dk.

BOSSIER PARISH—Atlantic Oil Producing Co.'s Bolinger 1, 29-23-11, lcn. Skannal et al's Fee 1, 22-17-12, sw 2590 ft; plugged back to 2450 ft. Sneed et al's Jones 1, 23-18-11, sd 400 ft. Tarver Pet. Co.'s Bolinger 1, 15-22-14, sd 2657 ft. Zink & Kurbert's McGuffin 1, 4-18-11, sd 260 ft.

CALDWELL PARISH—Culver et al's Culver 1, 21-14-4e, rig.

CLAIBORNE PARISH—Triangle Drilling Co.'s Ranich 1, 17-22-5, sd 2650 ft.

CADDO PARISH—Brewer et al's Sharp 1 15-18-16, r 2465 ft. Caddo Western Gas Co.'s Gardner-Blades 1, 2-16-15, sd 2050 ft. Crude Oil Co.'s Alexander-Ledbetter 1, 27-16-14, sd 1510 ft. Humble Oil & Refining Co.'s Youree-Randolph 1, 24-20-15, fsh 2892 ft. Louisiana Pet. Co.'s Brewer 1, 33-23-16, dr 2600 ft. Matson et al's Nickerson 1, 30-19-15, dk. Myra et al's Roberts 1, 34-23-16, sd 2810 ft.

DE SOTO PARISH—Caldwell et al's Welch 1, 7-14-10, dr 1765 ft. Terrell et al's Porter 1; 22-12-13, coring 1085 ft; Porter 2, 15-12-13, dk tmbrs. Ulrey et al's Frost-Johnson 1, 3-11-15, to set 8-in 1500 ft.

LA SALLE PARISH — Helm & Burch's Urania 1, 21-11-3e, dk. Urania Pet. Co.'s Urania 2, 20-10-2e, sd 2120 ft; Urania 3, lcn.

LINCOLN PARISH—Bickner et al's Colvin 1, 35-20-2w, dk. Four Creeks Oil Co.'s Colvin 1, 35-20-3w, sd 950 ft. Middlefork Synd.'s Kay 1, 8-20-3w, cas stuck td 2356 ft.

RED RIVER PARISH—Coushatta Synd.'s Marsten 1, 24-12-10, sd 2250 ft.

UNION PARISH—Arkansas Nat. Gas Co.'s Templeton 1, 19-23-1e, sd 120 ft. Cargile et al's Heard 1, 25-21-3w, dk tmbrs. Davidson & Palmer's Green 1, 19-23-1e, dry 2291 ft; dr deeper 2350 ft. Evans et al's Cole 1, 16-22-2e, lcn. Lide et al's Templeton 1, 18-23-1e, lcn. Neddo Petroleum Investment Corp.'s Smith 1, 2-23-3w, rig. Noe et al's Gulley 1, 36-21-1e, dr 1120 ft. Ohio Oil Co.'s Dubach Lumber Co. 1, 15-20-1w, set 10-in 103 ft. Roxana Pet. Co.'s Smith 1, 30-22-2w, dr 450 ft. Tarver et al's Rhodes 1, 30-21-1w, dk. Union Parish Drlg. Synd.'s Fee 3, 17-23-1e, sd 2287 ft.

WEBSTER PARISH—Cotton Valley Synd.'s Merritt 1 and 2, 14-21-10, lcns. Fortuna Oil Co.'s Pruitt 1, 17-21-9, rig; Stratton 1, 31-22-10, dr 50 ft. O'Brien et al's Dales 1, 26-21-9, dr 1750 ft. Oil Fields Gas Co.'s Hope A-1, 13-21-10, dr plug and bailed dry 2396 ft; Hope B-1, B-2, and B-3, 13-21-10, lcn. Palmer & Blount's Anders 4, 6-18-10, sd 825 ft. Palmer Corp.'s Miller 1, 29-21-10, to resume dr 3378 ft. Snyder et al's Hodges 2, 15-21-10, dk. Standard Oil Co.'s Woodward & Walker 1, 16-17-8, dr 1000 ft. White Oil Corp. and J. K. Wadley's Gleason 1, 31-22-9, rig.

Arkansas Wildcats

CALHOUN COUNTY — Harris & Bickley's Freeman-Smith 1, 26-16-13, sd 1152 ft.

CLARK COUNTY—American Drlg. Co.'s Wilson 1, 15-8-22, sd 440 ft.

CLEVELAND COUNTY—Clark & Melat's Wilson 1, 12-8-12, dk. Rex O. & G. Co.'s Ward 1, 18-11-11, sd 610 ft. Southern Arkansas Oil Co.'s Moore 1, 27-9-10, to re-set 8-in 1725 ft; location in 18-9-9, dk tmbrs on ground.

COLUMBIA COUNTY—Brown et al's Robinson 1, 23-18-23, sd 2844 ft. De Soto & Hickman's Fullenwilder 1, 3-16-21, set 6-in 2166 ft. Dowdy et al's Fullenwilder 1, 12-17-22, set 6-in 2070 ft. td 2164 ft. Hosey et al's Haire 1, 30-19-8, sd 2156 ft. Miller et al's Watts 1, 20-16-18, sd 1900 ft.

DALLAS COUNTY—Conway et al's Rigg-Matlock 1, 33-8-15, sd 1805 ft. Langley et al's Coleman 1, 6-10-14 dk tmbrs.

DREW COUNTY—Graves et al's Karnes 4, 10-13-6, set 8-in 1748 ft. Rhodes et al's Martin 1, 27-12-8, dr 1150 ft.

GRANT COUNTY—Grant County O. & G. Co.'s Cargile 1, 26-5-12, sd 1740 ft. The Texas Co.'s Chicago L. & T. Co. 1, 14-5-13, dr 150 ft.

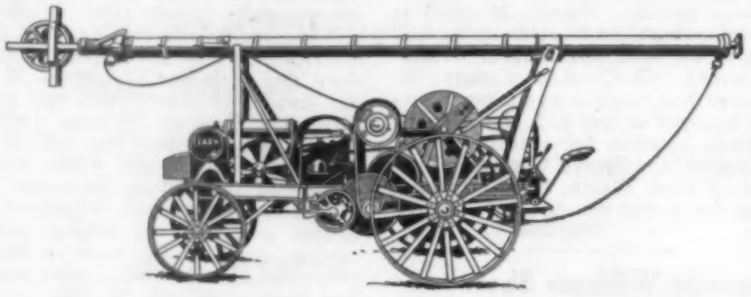
HEMPSTEAD COUNTY—Hope Columbus Oil Co.'s King 2, 24-11-25, dry 2107 ft; to deepen. Martin et al's Adams 1, 36-12-27, dr 2190 ft. Meyer et al's Nicholls 1, 17-11-25, sd 2170 ft. Orr et al's Yates 1, 19-12-23, sd 1610 ft.

LA FAYETTE COUNTY—Ken-Saw Pet. Co.'s Red River 1, 34-19-24, sd 2823 ft. Lewisville Synd.'s Osborne 1, 16-15-24, coring 2230 ft. Wilburn et al's Hughes 1, 21-19-23, dr 310 ft.

LITTLE RIVER COUNTY—Gaines et al's Thomas 1, 15-13-29, sd 1890 ft. Johnson et al's Hawkins 1, 10-11-31, sd 960 ft. Red River Valley Oil Co.'s Taylor 1, 29-13-29, sd 2790 ft.

MILLER COUNTY—Cochran & Ray's Adams 1, 4-14-27, sd 2850 ft. Kingsley et al's Thompson 1, 33-14-28, sd 500 ft.

NEVADA COUNTY—Arkrado Oil Co.'s McCain 1, 36-10-33, rig. Anderson & Edwards'



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CUNNINGHAM CO.

CUNNINGHAM CO., will operate as a Machine Shop, Foundry and will handle oil field supplies and specialties.

The same policy of Good Service, Workmanship and Quality will be carried out under the new name.

The officers of the Cunningham Co., are as follows: W. P. Cunningham, president and general manager; E. N. Wycoff, vice president; J. T. McCullough, secretary and treasurer; Earl W. Miller, sales manager.

Eaves 1, 11-12-23, sd 180 ft. Carter et al's Bailey 1, 31-13-21, sd 400 ft. Kan-Ark Pet. Co.'s White 1, 11-13-21, rig. Miller-Burnham-Hawley Synd.'s Perry 1, 12-15-22, sd 545 ft; SLM. Prescott Oil Co.'s Henry 1, 10-12-20, sd 2406 ft. Steele & Sandlin's Martin 1, 13-14-22, sd 2420 ft. Transcontinental Oil Co.'s Blakeley 1, 14-13-20, dr 2590 ft. Wooten et al's Moore-Martin 1, 9-13-20, sd 1225 ft.

OUACHITA COUNTY—Amerada Pet. Co.'s Lester Mill Co. 1, 9-13-19, lcn. Eck & Boger's Criner 1, 21-15-19, dk. Foster et al's Harvey 1, 32-11-19, dk. Hopkins et al's Allen-Curry 1, 33-14-19, sd 2050 ft. Leeper et al's Wesson 1, 23-15-19, set 2½-in on packer; wosr 2205 ft. Peltier et al's Eagle 1, 25-12-16, sd 2054 ft. Pure Oil Co.'s Moline 1, 21-11-17, sd 2415 ft. Riley et al's Henry 1, 10-11-16, sd 2072 ft. Smackover Creek Oil Co.'s Moon 1, 32-15-17, set 6-inch and sd 1861 ft.

UNION COUNTY—Bondurant et al's Clark 1, 34-17-12, to set 4½-in 2655 ft; Turbeville 1, 9-18-12, sd 1610 ft. Garrett et al's Robinson 1, 33-18-14, sd 2462 ft. Harrell Trust's Steele 1, 11-19-12, sd for cas 2435 ft. Quaker City Pet. Co.'s Salome 1, 14-17-15, dr 2130 ft. Ray et al's Long 1, 28-16-14, sd 1960 ft. Starke et al's Little 1, 21-19-12, sd 2220 ft.

Oklahoma Wildcats

ALFALFA COUNTY—McGinnis & Ward's Watts 1, C NE SW SE 21-27-10w sd 800 ft. Armstrong, Henley & Peffler's Turnbull 1, C NW SE NW 23-24-11w sd 200 ft.

ATOKA COUNTY—McPhearson et al's Wild 1, SWc NW 7-2-9, dr 3000 ft. Hanson et al's Dabney 1, C SE NW 17-4-11, sd 100 ft. Wapanucka Dev. Co.'s Underwood 1, C W L E½ SE SE 28-2-9 sd 1700 ft. J. P. Torrence et al's Fee 1 SWc NE NE 1-2-9 sd 1350 ft.

BECHAM COUNTY — Bollion Oil Co.'s Green 1, C SW SW 34-10-24w sd 1360 ft. Ship-Nash et al's 1, SEc NW 35-9-25,w, fsh 2400 ft. J. A. Pringle's Burkholder 1, C NE NE 6-9-24w, sd 3110 ft. Magnolia Pet. Co.'s Ezzell 1, NEc 36-9-24w r 3892 ft. Turman Oil Co.'s 1, SWc NE 4-8-22w, sd 2757 ft.

BLAINE COUNTY—Okomo Oil Co.'s Edlemaier 1, 21-15-10w, dr 625 ft. Thompson's Dickerman 1, C SE SE SE 26-15-12w, sd 3213 ft.

BRYAN COUNTY—Lyon et al's Coombs 1, SEc SW NW NE 11-8-9, rig.

CLEVELAND COUNTY — Garr Oil Co.'s Holland 1, NEc SE 31-10-4, r 2570 ft.

CUSTER COUNTY—Hoover Oil Co.'s 1, NWc SE 34-13-14, sd 2510 ft.

COAL COUNTY—Basie Oil Co.'s Heck 1, SEc 18-2-9, rig. Bearman et al's Payte 1, SWc NW NE 32-2-9, sd 2780 ft. Guy Vaughn's Downard 1, NWc SW 18-2-10, dr 1675 ft; Nichols 1, SW 1-1-11 rig. McPhearson et al's Jamison 1, NWc NE NE SW 24-1-8, sd 300 ft.

GRANT COUNTY—Ossenbeck et al's Hoffman 1, SEc 23-29-3, r 2295 ft. Walters Oil & Gas Co.'s Kuykendall 1, NEc SW 11-25-7w dr 2090 ft. Embry et al's Edwards 1, C SE SE NW 20-26-4, skidding rig 50' ft north. Alcorn Oil Co.'s Hubbard 1, C S L NW 12-26-2, set 5-in at 3678 ft show oil. Day Oil Co.'s Vannatta 1, SWc NW 8-26-2w, sd 1270 ft.

GREER COUNTY—Western Nat. Gas Co.'s De Armond 1, NWc SW 23-7-23, sd 2015 ft. Neal et al's Johnson 1, SEc NE NW 3-7-22w sd 100 ft.

HARMON COUNTY—Keyea Oil Co.'s 1, NWc SW 21-2-26, set 8 in at 1963 ft.

HUGHES COUNTY — Flesher Pet. Co.'s Smith 1, NWc NE NW 8-9-12, r 3250 ft. W. J. Thurber's Foster 1, SEc SW SE 5-7-8, dr 1370 ft. Kingwood Pet. Co.'s Burnett 1, NWc NE SW 7-7-10, dr 5227 ft. Paraffin Oil Co.'s Love 1, NEc SE NE 13-7-12, sd 2961 ft. Middle States Oil Co.'s 1, NWc 13-6-11, dr 3530 ft.

JACKSON COUNTY — Douglas Oil Co.'s Jackson 1, NWc SW SE 20-3-20, dr 3405 ft. J. D. Wade 1, C SW NW 36-2-23, dr 1900 ft.

JEFFERSON COUNTY — Magnolia Pet. Co.'s Peck 1, C NW SW NW 4-3-6, dr 2056 ft. Humble Oil & Ref. Co.'s Lewis 1, NEc NE SE 16-6-7, dr 2460 ft. Hutton Bros. Kareatobe 1, NEc NE SW 5-5-7w, sd 2503 ft. Shawver et al's Anderson 1, SEc NE 31-4-8w, sd 1050 ft. Gant et al's Skelton 1, C NE NE NW 22-3-6w, dr 1375 ft. J. C. Cook Oil Co.'s Gibson 1, C NW NW NW 36-5-8w, dr 1260 ft.

KAY COUNTY—Comar & Gypsy Oil Co.'s Garrett 1, C NE NW SE 31-27-2, sd 2239 ft, show oil will deepen. Ostot Dev. Co.'s Rohos 2, C NW NW SE 3-27-1, dr 1824 ft. U. S. Smelter Co.'s 1, NWc NE SW 15-27-1, co 3474 ft, swabbing 50 bbls. Blackwell Oil & Gas Co.'s Kumber 1, C NE SE 9-27-1, dr 2454 ft; Humphreys 2, C NW NW SW 10-27-1, dr 2112 ft. Alcorn Oil Co.'s Mills 1, C NW SE 24-26-1, dr 2020 ft. Amerada Pet. Co.'s Elledge 1, NEc SE 32-27-1, dr 3096 ft. Guyles & Daniels Chism 1, SEc NW 23-29-2, sd 2060 ft, show oil. Brown & Wood's Lowery 1, NEc SW 11-26-1, sd 1245 ft. Mid-States Pet. Co.'s Cardin 1, SWc SE 8-28-2, sd 3200 ft.

KIOWA COUNTY—Connor et al's 2, NEc NW NW 34-7-16, r 1350 ft. Kiowa Dev. Co.'s School 2, NWc NE 33-6-20, sd 960 ft.

LINCOLN COUNTY—Haines et al's Horton 1, SWc NE 7-14-4, dr 3290 ft. Sun Ray Oil Co.'s Gallagher 1, C N L SE SE 18-13-5, sd 2210 ft to standardize.

LOGAN COUNTY — Buford-Brim Oil Co.'s Newman 1, NWc NE 32-19-3w, collapsed cas 2485 ft. Frank P. Kelly et al's McDaniels 1, NEc 28-16-1 lcn. Okla Drlg. Co.'s Johnson 1, SEc SW 36-15-2w sd 1716 ft.

LOVE COUNTY—Wickenheiser et al's Beal 1, NEc SE NW 13-5-3, sd 2465 ft. Drillers Synd. Oil Co.'s Wilson 1, NWc NE 11-7-2, sd 2830 ft.

McCLAIN COUNTY—Day Oil Co.'s Ball 1, SEc NW NE NE 9-5-3, dr 1250 ft.

MARSHALL COUNTY—Humble Oil & Refining Co.'s Scott 1, SEc NE SW 22-6-4 sd 2986 ft. Magnolia Pet. Co.'s Everett 1, C NE NE SE 36-7-5, dr 2575 ft. Van Vleck et al's

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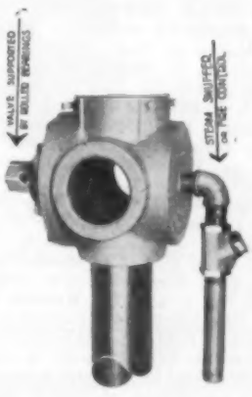

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Shreveport, La. — Mexia, Texas
Dallas, Texas

STEEL

Chaffin 1, C SE NW NW 27-5-4 sd 2535 ft. Lane & Watson's Sacra 1, C NW SE NE 10-5-5 sd 150 ft.

OKLAHOMA COUNTY — W. R. Ramsey Hendricks 1, SEc 8-12-1, sd 3655 ft. Firestone Oil Co.'s School 1, NWc SE 36-11-3, dr 3470 ft. Big Three Oil Co.'s Wild 1, SWc NE 31-12-12, rig down 1390 ft.

PITTSBURGH COUNTY—Paraffin Oil Co.'s Pratt 1, NWc SE NE 13-7-12, set 10-in at 1976 ft.

PONTOTOC COUNTY—Harper et al's Denar 1, NWc SE SE 19-5-7, dr 420 ft. Smith et al's Norris 1, SWc SE 34-4-6, sd 2420 ft. Am. O. & Ref. Co.'s Stark 2, SEc NW 16-4-6 dr 1100 ft.

POTTAWATOMIE COUNTY — Ossie Oil Co.'s Howell 1, SWc NE 13-10-2, r 2460 ft. Magnolia Pet. Co.'s Bredingberg 1, C SE SW NW 18-7-5, dr 2860 ft. Dave Detrick's McGahey 1, SEc 10-6-2, dr 2855 ft. North American Oil Co.'s Madgett 1, NWc 25-10-4, rig. H. G. Guinnup et al's Floyd 1, SWc SE 13-11-3, dr 2120 ft.

ROGER MILLS COUNTY — Kellogg Oil Co.'s Dr. Seba 1, C E L NE NE 10-16-21, dr 2860 ft. Twin Hills Oil Co.'s McClure 1, NW 15-15-26w, sd 1520 ft. Colorado Oil Co.'s 1, C NW NW NW 32-16-22w, sd 300 ft. A. D. Morton's Elders 1, C SE 22-16-18w sd 300 ft.

SEMINOLE COUNTY—H. Taylor's Johns 1 SEc NE 34-9-6, sd 2368 ft. Independent Oil Co.'s Ahaisse 1, NEc SW 15-9-8, sd 3398 ft, show oil. W. E. Phillips et al's Davis 1, SEc NE NE 28-9-8, fsh 3078 ft. Ossenbeck et al's Davis 1, C SW NE 10-8-7, fsh 3335 ft. Wm. McDougall's Belle Dindy 1, SW SW 20-6-7, sd 1645 ft. Maxwell et al's Charty 1, C NE NW 36-6-6, rig. Link Oil Co.'s Carolina, 1, C SE NW 14-6-7, co 1875 ft.

TILLMAN COUNTY—Luffborough et al's Finley 1, SWc NE SW NW 27-2-7 co 2975 ft. Okla-Tex Oil Co.'s Owen 4, NEc SE SE NE 7-5-14, sd 1504 ft, to standardize. Continental Oil Co.'s Riverbed 4, SWc NW 8-5-14, cementing 6-in at 1501 ft. Marshall Bros. Riverbed 1, SWc NE 8-5-14w, cementing 6-in at 1520 ft.

WASHITA COUNTY—R. B. Hartman's 1, NEc SW SE 23-9-7, sd 3030 ft. Santrock Bros.' 1, SWc NE 20-8-16, sd 2740 ft. McCoy et al's Prattears 1, C SW SW NE 9-8-15w, sd 50 ft.

Central West Texas Wildcats

COMPLETIONS

Company, Well, Location—	Initial Production Bbbls.	Depth
Callahan County—		
Moore et al Acker 2	25	2524
T. B. Slick H. P. Faulkner 1	25	2535
Palo Pinto County—		
Ed Costello Costello 1	20	2705
Clark & Burch's Mrs. L. F. Conklin 1	*	3955
Throckmorton County—		
Richardson et al Reynolds 1	10	942

DRILLING REPORT

BROWN COUNTY—Carlton-Tippett et al's O. B. Fomby 1, sd 1315 ft. Crabb et al's B. W. McDonough 2, lcn abn. Joe Cullinan et al's G. W. Pickett 1, sd 1135 ft. Infield Pet. Co.'s T. M. Windham 4, setting cas 2375 ft; Windham 5, rig. Leonard et al's Prather 2, fsh tools 2370 ft. Maher Bros.' Bohara 1, sd 2155 ft. Omaha Southern Oil Co.'s G. B. Gaines 2, sd 1690 ft. Price et al's Blair 2, sd 2910 ft. Pennant Oil & Gas Co.'s W. B. Strickland 1, dr 2830 ft.

HOOD COUNTY—Corsicana Oil & Ref. Co.'s I. A. Rylee 1, dr 995 ft.

PALO PINTO COUNTY—Bankhead & Wheeler's Bankhead 1, sd 275 ft. Dalton-Bell Oil Co.'s R. S. Dalton 1, showing lots oil and no gas, sd shot in sand 1220-55 ft. Jack Dalton Oil Co.'s R. S. Dalton 2, sd 4025 ft; Dalton 5, sd after shot 4060 ft. E. Hess et al's Crocker 1, sd cas 1525 ft. Hughes, Craig & O'Neil's Jones 1, sd 3810 ft. Moore & Sneboldt's Pruitt 1, dr 2275 ft. S. W. Manning et al's R. Hitson 1, sd 3640 ft. Nelson Oil Co.'s Finch 2, sd for shot 4155 ft. Pender

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Prompt Delivery

Better than ordinary casing for shallow wells; an absolute necessity for deeper holes.

Standard Seamless Tube Co.

Pittsburgh, Pa.

Production Co.'s L. C. Slemmons 1, fsh tools 4100 ft. Phillips & Graham's J. A. Caudill 1, sd 2350 ft. Simms Oil Co.'s Costello 1, showing oil, dr 3875 ft. Scott & McCluer's Riverbed 1, sd 3712 ft; Riverbed 2, rig abn. H. L. Singleton et al's W. Holt 1, sd 3715 ft. Skelly Oil Co.'s Carter 1, rigged up.

CALAHAN COUNTY — Byron-Union Oil Co.'s Hennessey 1, sd 3970 ft. Dudley Oil & Gas Co.'s Hugh Moore 1, sd 1750 ft. Chas Dutton et al's Mrs. Luke Cathey 2, dr 1440 ft. Hickey et al's E. L. Findley 2, dr 2360 ft. Junior Oil Co.'s Thorn 1, dr 2465 ft. Moore et al's Acker 4, spudding; H. P. Faulkner 2, rigging up. F. W. Stone & Co.'s H. P. Faulkner 1, lcn abn. F. W. Stone & Slick's C. W. Barr 1, making 2,000,000 cu ft gas 1401-08 ft. Shackelford et al's Chas Allen 1, sd 1575 ft. Andy Urban's Clinton 1, rigging up.

BORDEN COUNTY—Kesselman Dev. Co.'s A. J. Long 1, rigged up.

BREWSTER COUNTY—Arco Dev. Co.'s H. L. Kokernot 1, re-setting 5 3/16-in cas 2765 ft. Brewster Oil Co.'s H. L. Kokernot 1, sd 2535 ft. Portland Oil Synd.'s State 1, sd 2765 ft. Nine Points Oil Co.'s Peralto & Finnell 1, sd 1570 ft. Marathon Oil Co.'s Nigger Creek 1, sd 2350 ft; Wilson 2, sd 4000 ft.

COKE COUNTY—Ace Oil Co.'s W. C. Locke 1, spd and sd. Adkins Oil Co.'s J. R. Smith 1, lcn. Mexia-Equitable Oil Co.'s W. J. H. Hodges 1, sd 2505 ft.

CONCHO COUNTY—Signal Oil Co.'s Sam Waring 1, preparing to set 5 3/16-in cas 3140 ft. Dome Oil Co.'s Mrs. C. H. Hartgrove 1, star machine. W. O. Schultz Oil Co.'s Schultz 1, sd 3225 ft.

CROCKETT COUNTY—Crockett County Drilling Synd.'s J. M. Shannon 1, dr 1975 ft; Shannon 2, lcn; Robt. Massey 1, sd 510 ft. Enders-Smith & Co.'s University 1, sd 810 ft. The World Co.'s L. P. Powell 1, rigged up. W. E. Ball et al's J. S. Todd Ranch 1, lcn.

CULBERSON COUNTY—J. D. Wesner's Mack Sayles 1, sd 3105 ft. Consolidated Sulphur Co.'s Johnson 1, sd 115 ft.

DAWSON COUNTY—Lamesa Oil Co.'s John Burns 1, sd 2155 ft.

ECTOR COUNTY—Farmers Oil Co.'s Andy Newham 2, sd 1400 ft.

EL PASO COUNTY—Cinco Minas Co.'s Burns & Knight 1, sd 4030 ft.

FISHER COUNTY—Pyron Oil Co.'s J. S. McCall 1, sd 3125 ft.

GLASSCOCK COUNTY—Cushing Ranch Drilling Assn.'s W. H. Sparkman 1, sd 1950 ft. General Oil Co.'s L. S. McDowell 4, sd 3685 ft. Associated Ref. & Prod. Co.'s C. I. Brunson 1, sd 2935 ft.

HUDSPETH COUNTY—Boole Oil Assn.'s Gardner et al 1, sd 1540 ft. Hueco Basin Oil Co.'s University 1, sd 2555 ft. William Loftus et al's Minnie Veal 1, spd. and sd.

HOWARD COUNTY—Big Springs Oil Co.'s Mabe, O. Quinn 1, sd 3640 ft.

JONES COUNTY—Anson Oil & Dev. Co.'s C. B. Brown 1, sd 1855 ft. C-H Oil Dev. Co.'s J. A. Cullom 1, sd 3150 ft.

LOVING COUNTY—Ramsey Prod. Co.'s Russell 1, sd 4485 ft; Russell 2, sd 810 ft.

MITCHELL COUNTY—The California Co.'s W. H. Abrams (T. & P.) 5, timbers; W. H. Butler 1, dr 760 ft; A. L. Miller 2, dr 1310 ft; Earl Morrison 1-A, dr 4020 ft; Morrison 2-A, dr 840 ft; Earl Morrison 6-B, rigged up; L. C. LeSure 2, lcn. J. F. Carey et al's Earl Morrison 1, tmbrs. Colorado-Texas Pet. Co.'s W. L. Foster 2, sd 2625 ft. C. F. Kelsey et al's W. H. Badgett 1, preparing to pump, td 3120 ft. S. A. Sloan Oil Co.'s Sam Smart 2, dr 2889 ft.

PECOS COUNTY—Trans-Pecos Oil Co.'s Helen L. Thomas 1, dr 440 ft; Bennette et al's 1, sd 865 ft; Turney 1, sd 1630 ft; Johnson 1, rigging up to drill to 4500 ft, td 3520 ft. Southern States Lease & Prod. Co.'s J. M. Odem 1, sd 1305 ft. Oregon-Texas Oil Co.'s Turney 1, sd 3025 ft.

PRESIDIO COUNTY—Clauce Byler's Toole Estate 1, dr 455 ft.

REAGAN COUNTY—Big Lake Oil Co.'s University 2, dr by junk, td 2770 ft; University 3, testing cas to drill in pay, td 2938 ft; University 4, spudding; University 5, rigged up; University 6, lcn; University 7, lcn. Arkansas Nt. Gas Co.'s University 1, lcn. Mid-Kansas

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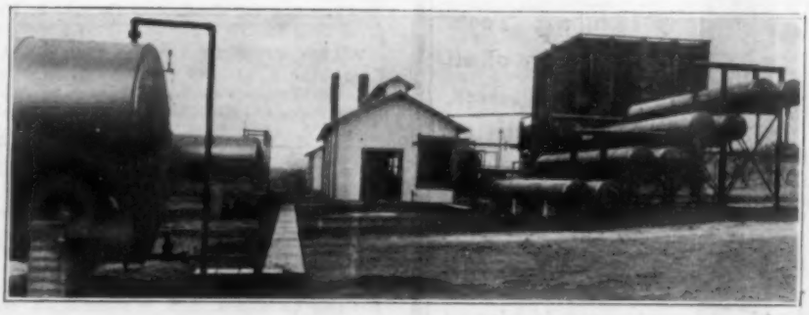

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Oil & Gas Co.'s McIntosh Ranch 1, lcn. W. H. Dunning's Sawyer Cattle Co. 1, lcn.

REEVES COUNTY—Dixieland Oil Co.'s Oates 2, co 4505 ft. W. S. Troy et al's H. G. Hersheusen 1, sd 415 ft. Bell Reeves Oil Co.'s Findley et al 1, sd 1540 ft. El Paso Saragosa Oil Co.'s George Wirt 1, sd 540 ft. Parker-Hancock Oil Co.'s Johnson 1, sd 1930 ft. Willoughy Pet. Co.'s W. D. Cowan 1, sd 610 ft. Rodenbaugh & O'Connell's W. D. Casey 1, sd 845 ft. Pico Pet. Co.'s Johnson 1, sd 1930 ft. Texas Drilling & Dev. Co.'s Pecos Valley 1, sd 1105 ft.

RUNNELS COUNTY—Safety First Oil Co.'s Will Allen 1, plugging to abn 4000 ft. Russell Prod. Co.'s Russell 2, sd 2500 ft.

SCHLEICHER COUNTY — Paragon Oil Co.'s B. M. Boyd 1, setting 5 3/16-in cas, td 3055 ft.

SCURRY COUNTY—The Loutex Corp.'s J. J. Moore 1, co 3576 ft. Col. A. E. Humphreys et al's H. P. Welborn 1, rigging up. Camp Springs Oil & Gas Co.'s L. E. Howell 1, lcn; W. R. Quinn 1, sd for cas 2035 ft; W. V. Jones 1, sd 605 ft. Hermleigh Oil & Gas Co.'s J. W. Burris 1, sd 3005 ft. Stanton Oil & Gas Co.'s J. W. Riley 1, sd 3505 ft. C. C. Brandon's J. A. Kemp 1, lcn. J. O. Quinn's L. Sturdevant 1, lcn.

STERLING COUNTY—Co-Operative Lease & Dev. Co.'s Douthitt 1, sd 1815 ft. Chicago Oil & Gas Co.'s B. C. Durham 1, showing oil at 1445 ft, sd 1500 ft. Fidelity Oil Co 's C. R. Hull 1, sd 1215 ft. Concho River Drilling Assn.'s George McIntyre 1, sd 505 ft.

TAYLOR COUNTY — Abilene-Texas Oil Co.'s J. C. High 1, sd 2135 ft. Sanger Oil & Ref. Co.'s Hall 1 ,sd 3050 ft.

TERRELL COUNTY—Southwest Texas Oil & Gas Co.'s S. W. T. 1, dr 3505 ft. Pittsburgh-Western Oil Co.'s Chas. Downey 1, sd 1260 ft.

TOM GREEN COUNTY — Ranger Investment & Dev. Co.'s Harris 1, sd for 4-in cas 3116 ft with small showing oil and hole full water.

VAL VERDE COUNTY—East Del Rio Oil Co.'s E. F. Russell 1, dr 1845 ft. G. Cook et al's Bedel Moore Estate 1, sd 1255 ft. Independent Operator's Whitehead 1, sd 1805 ft. Re-Clamation Oil Production Co.'s J. B. Moore 1, sd 2630 ft.

WARD COUNTY—Arthur Pitts Oil Co.'s Soda Lake 1, sd 2205 ft; River 1, sd 4675 ft. Cook & O'Brien's G. W. O'Brien 1, sd 1175 ft. Trans-Pecos Oil Co.'s Longnecker 1, sd 1765 ft.

North Texas Wildcats

(Note—This report does not include tests that have been shut down indefinitely.

BAYLOR COUNTY—Sunshine State Oil & Refining Co.'s Mrs. E. S. Wallace 1, dk. Wurtz et al's Porter Ranch 1, sd 1010 ft.

CLAY COUNTY—Crude Oil Producing Co.'s Kiader 1, ur 1100 ft. J. T. Cumley et al's J. D. Stine 1, dk. E. C. D'Yarmett's Carpenter 1, sd 2000 ft. Gulf Production Co.'s H. Boddy 1, fsh 2800 ft; C. M. Worsham 3, dr 1500 ft. Lone Star Gas Co.'s N. H. Martin 1, dr 900 ft; Withers 2, dr 950 ft. Nebraska Oil & Gas Co.'s W. H. Myers 1, set cas 3310 ft. Nix-Moore Oil Co.'s F. M. Hull 1, sd 1500 ft. Seaboard Oil & Gas Co.'s L. Zihlman 1, dk.

COOKE COUNTY—Big Indian Oil Co.'s B. W. Davis 1, sd 2790 ft. Red River Drilling Co.'s Whaley Jones 1, sd 1300 ft.

DENTON COUNTY—Hill Crest Oil & Dev. Co.'s J. H. Rayzor 1, sd 1350 ft.

GRAYSON COUNTY—Zee Tex Oil & Dev. Co.'s G. W. Cannon 2, sd 2960 ft; Griffin 1, sd 2225 ft.

HARDEMAN COUNTY—Frizell Oil Co.'s M. S. Winbury 1, sd 3075 ft.

KING COUNTY — Banks Oil Co.'s J. R. Hailey 1, sd 1630 ft.

KNOX COUNTY—Brazos Bend Oil Co.'s J. E. Clark 1, dr 1875 ft. White Oil Corp.'s Ward Ranch 1, sd 2810 ft.

MONTAGUE COUNTY — Bowie Chief Oil Co.'s C. H. Boedeker 1, sd 2725 ft. Gulf Prod. Co.'s T. Benton 1, dr 3320 ft. Humphreys Oil Co.'s J. W. Maddox 3, sd 1950 ft. Mascho Oil Co.'s J. L. Howard 1, sd 2200 ft. Rycade Oil Co.'s R. D. Beasley 1, set cas 3100 ft. Spencer & D'Yarmett's Wilson 1, sd 1080 ft. Texon Oil Co.'s L. Crenshaw 1-A, sd 2300 ft; L. Crenshaw 1-B, sd 1225 ft. The Texas Co.'s C. W. Rucktashel 1, dr 280 ft.

THROCKMORTON COUNTY—Ashcraft et al's Polk Co. School Land 1, dr 1050 ft. Monroe Production Co.'s R. S. Ray 1, sd 595 ft. J. H. Richardson et al's Reynolds Cattle Co. 1, sd 945 ft.

WILBARGER COUNTY—Adams, Brown & McAllister's W. T. Waggoner 1, dr 2025 ft. J. S. Dennis' W. G. Beckett 1, sd 750 ft. Herrington & Robinson's McCaleb 1, dr 2170 ft. Noble Oil Co.'s W. T. Waggoner 1, sd 1125 ft. South Vernon Oil Co.'s W. H. Stehens 1, sd 1760 ft; estimated 25-bbl well.

Texas Panhandle Wildcats

(Note—The drilling report below does not show wells that are shut down indefinitely.

ARMSTRONG COUNTY — Magnolia Pet. Co.'s Adair Estate 1, sd 3975 ft.

CARSON COUNTY — Culbertson Bros.' V. B. Armstrong 1, sd 175 ft. Gulf Production Co.'s S. B. Burnett 3, sd 3150 ft. Humphreys Oil Co.'s J. M. Sandford 1, sd 2535 ft. W. W. Silk et al's S. B. Burnett 3, dr 2200 ft. The Texas Co.'s Mary C. Burnett 1, sd 40 ft; S. B. Burnett 3, dr 1850 ft. Tipton, Stone et al's McConnell 1, sd 3028 ft.

GRAY COUNTY — W. H. Holmes et al's

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J. S. Morse 1, sd 915 ft. The Texas Co.'s G. H. Saunders 1, swaging cas 2375 ft.

HEMPHILL COUNTY — Piney Oil Co.'s Hopkins 1, dr 3050 ft.

HUTCHINSON COUNTY—Coline Oil Co.'s M. Sandford 1, sd 3220 ft. Humphreys Oil Co.'s Johnson Bros. 1, fsh 2600 ft. Montgomery Oil Co.'s Johnson Bros. 1, ur 1880 ft. Plains Oil Co.'s J. F. Weatherly 1, sd 3260 ft. Producers & Refiners Co.'s L. Bivens 1-B, dr 1660 ft. Watchorn Oil Co.'s Cable 1, rigging up. Wilson et al's Johnson Bros. 1, laying water line.

MOORE COUNTY—Producers & Refiners Corp.'s Masterson 1, material on ground.

ROBERTS COUNTY—Roy Schenck et al's O. Laughlin 1, sd 60 ft.

WHEELER COUNTY—Mid Continent Oil Synd.'s Ember 1, lcn. Roy Schenck et al's J. F. Bradley 1, dk. Skelly Oil Co.'s Davis Bros. 1, dr 3150 ft. H. C. Tyrell et al's F. E. Sheldon 1, dr 1550 ft. J. Whittington's Williams & Laycock 1, sd 1950 ft.

Coastal Wildcats

Company, Well, Location—	COMPLETION	Initial Production Bbls. Depth
Austin County—		
Texas Co.'s Pomykal 1	*	2118
Chambers County—		
Houston Oil Co.'s J. J. Mayes Est 1	*	....

DRILLING REPORT

DUVAL COUNTY—Flornoy & Givens' Gonzales 1, dr. Humble Oil & Ref. Co.'s Singer 5, dr 2205 ft. Mar-Tex Oil Co.'s Ridder 1, dr. Queen Oil Co.'s Dinn 1, dr.

HARRIS COUNTY — Texas Exploration Co.'s Warren 13, pumping; Warren 15, waiting for cement to set at 2020 ft; Warren 16, dr 112 ft.

JACKSON COUNTY—Vanderbilt Pet. Co.'s Seliner 1, sd waiting for fuel.

JEFFERSON COUNTY—Rycade Oil Corp.'s McFadden 1, dr 4105 ft.

MATAGORDA COUNTY — Rycade Oil Corp.'s Gray 1, rigging up; Hudson 2, dr 3200 ft.

Northeast Texas Wildcats

COMPLETIONS

Bowie County—		
Tri State Oil Co. Taylor 1	*	2900
Cass County—		
Hughes Springs Synd. Stoval 1	*	2703
Queen City Oil & Gas Co. Jones 1	*	3208
Panola County—		
Galloway et al's Eden 1	*	3142
Morris Trustee's Lewis Werner Sawmills 9	¶	2020
Sabine County—		
Deering et al's Harris 1	*	2600
Shelby County—		
We Win Oil Co.'s Ashberry 1	*	1937

DRILLING REPORT

BOWIE COUNTY—Fitzhugh et al's Rochelle 1, set and cement cas at 2146 ft; Perkins 1, setting 6-in cas at 1943 ft. td 2032 ft. New Boston Oil & Gas Co.'s Hooks 1, r to set 6-in cas at 2000 ft.

CASS COUNTY — Midcontinent Oil Lease Corp.'s M. Stats 1, dr at 800 ft.

HARRISON COUNTY—Fuller & Scott's Furrh 1, lcn.

MARION COUNTY—McCormick et al's McCay 1, dk. Wenzel et al's Stallcup 1, tested dry at 2404 ft.

PANOLA COUNTY — O. L. Hickman's Stoddard 1, dr 1900 ft. Industrial Gas Co.'s Cook 1, dr 1100 ft. Magnolia Pet. Co.'s Steel 6, dr 975 ft; Anderson Est 1, testing at 2044 ft. Morris Trustee's Roberson 1, dr 1000 ft.

SHELBY COUNTY — We Win Oil Co.'s Ashberry 2, dr 2104 ft.

ALEXANDER DEUSSEN
CONSULTING GEOLOGIST
Reports—Appraisals—Management
Texas and Louisiana Oil Properties
1105-6 State Nat'l Bank Bldg., Houston Tex.

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Still Paying Premiums in Mid-Continent

Prairie's raise fails to alter policy of independent refiners in Oklahoma

Tulsa, Okla., Jan. 16.—Factors that go into the making of a stabilized crude market are becoming more pronounced in the Mid-Continent and the tendency continues strong and decidedly upward. The long expected increase posted by the Prairie and followed in turn by the major crude buyers has but straightened out for the time being the sag in the open market that had been brought about by the spread between the posted price and refiners' premiums.

The Prairie's new schedule has not done away with premium paying. The smaller refining interests are having to top the posted quotation with a small bounty, usually running from 10 to 15 cents a barrel depending on the gravity in order to insure a steady supply of crude. The advance in the market, however, has considerably reduced if not almost wholly eliminated premiums on the part of the larger independent buyers, except in the notable instances of Champlin and Kay County Gas Company (Marland). These latter two companies have posted a price higher than that of the Prairie or Sinclair on the Garber, Billings and Tonkawa crudes, oils of exceptionally high gravity. Champlin's price is $2 per barrel, effective January 10, and Kay County quotations range from $1.50 for 39 to 41.9 gravity oil to $1.65 for 42 and better.

For the first time since the turn for the better in the crude market became distinctly noticeable in the Mid-Continent some weeks back there now is a semblance of unity amoung crude purchasers with respect to prices paid for oil. So far as is known, except in the two instances already recounted, there is not one buyer of any importance who has not revised quotations in line with the new level established by the Prairie. This holds true not only for Oklahoma but for Kansas as well and has already imparted a steadying tone to the open market that is having a very salutary effect on the producer and refiner as well. Reports current the latter part of last week that Cosden was paying a premium for crude in the Bristow district are denied by company officials here.

There are numerous conjectures as to the effect of the partial removal of drilling restrictions in the Burbank pool in Oklahoma. Some students of the situation believe a rush of flush production is impending and completions in the field the first part of this week would seem to indicate that this belief might not be far wrong. Others hold to the opinion that the resumption of activity on an extended scale in Osage County will not bring about a very material increase in the field's output until the advent of the spring gasoline season when the crude demand will have become more insistent and in that event a mounting crude recovery in the more prolific pools will not constitute a menace to the price structure. Whatever may be the outcome the larger companies operating in Burbank are going after new production in a very aggressive manner and still are making preparations for an extension of drilling activities. By February 15 it is thought a full resumption of drilling will be in effect in the pool.

The advance of crude in the Appalachain region posted January 14 by the Seep Agency again reflected the attitude of the independent refiners in the East who are continuing to attract production by means of premiums ranging from 10 to 15 cents a barrel. Undoubtedly this is a reflection of conditions throughout the whole of the oil country east of the Rockies. Apparently, California crude that was such an overwhelming favorite among crude buyers last summer and fall has been sorely neglected in the price advances. This has brought about a widening in the spread between West Coast and Mid-Continent but evidently has not reacted to the detriment of the latter crude inasmuch as shipments of the larger crude buyers to the North and East has been steadily increasing, the notable example being in the case of deliveries to connections of the Prairie which reported during December a very substantial pick up in pipe line traffic. And it is understood that the Prairie's shipments for January are holding up in fine fashion. This is indicative of the accumulating strength of the Mid-Continent light oil market.

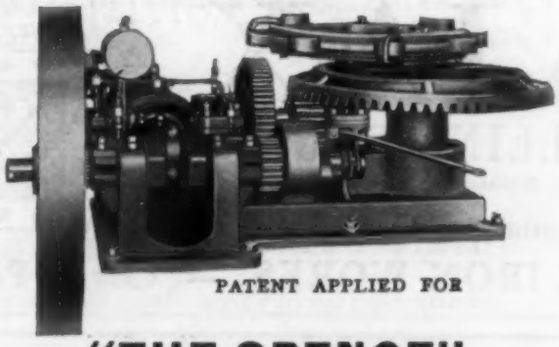
The producer in Oklahoma and Kansas is facing the new year with a firm determination to profit by the mistakes of the past. That's the way most of us—oil men and all—start out on another twelve months. However, the producer appears more determined than ever before to go slow and adopt a conservative attitude in all his dealings, whether in town or out in the field on the lease. The outlook is bright and stands a good chance of becoming brighter as conditions reflect the demand for both crude and refined oils. The gasoline situation is keeping pace with improvements in the producing and refining branches which is not only holding in line the marketer and jobber but makes him at peace with the world in a wider degree than in the past several months.

The producer in Kansas is all set for a big get-away in the western and south central portions of the state with the coming of spring and further improvement in the crude demand. Activity in Cowley and Sumner Counties and also in Russell County as well as in the settled fields gradually is taking on an optimistic tendency which likely will reach full attainment in the summer when the Sunflower state may see one of the liveliest drilling and exploration campaigns in its history.

Another advance in the price of Mid-Continent light oil before the first of the month at this time does not appear unlikely.

Former General Manager Of Gulf Company Dead

Tulsa, Okla., Jan. 16.—John F. Fisher, oil operator, died here yesterday, following an attack of pneumonia. Mr. Fisher was well known both here and in the Gulf Coast. At one time he reorganized the Gulf Production Company, Houston, Texas, and acted in the capacity of general manager of all its branches for a while. He then moved to Tulsa where he organized an oil company of his own.



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CRUDE AND REFINED MARKET QUOTATIONS

Jan. 10—Midwest Refining Company advanced Wyoming and Montana crude prices 40 to 45 cents per barrel.

Jan. 14—The Joseph Seep Purchasing Agency advanced three grades of Eastern crude 10 cents per barrel. The new prices are: New York Transit and Bradford district, $3.75 and Corning, $1.65 per barrel.

Jan. 14—Effective today the Humble Oil & Refining Company advanced the price of Corsicana, light and Mexia crudes, five cents per barrel. Both fields now demand $1.40 per barrel. The Texas Pipe Line Company and the Magnolia Petroleum Company later met these advances.

Crude Oil Prices

EASTERN STATES

	Jan. 19 1924	Jan. 20 1923
New York Transit	$3.75	$...
Bradford (Pa.)	3.75	...
Other Pennsylvania grades	3.25	3.45
Cabel	1.60	2.31
Ragland	.75	1.10
Corning	1.65	2.00
*Somerset, heavy	1.60	2.10
*Somerset, light	1.80	2.35

*Six cents above posted price since October 1, 1922.

CENTRAL STATES

Illinois	$1.62	$1.98
Indiana	1.63	1.98
North Lima	1.83	2.18
South Lima	1.83	2.18
Plymouth	1.00	1.35
Lodi	1.50	...
Princeton	1.62	1.98
Waterloo	1.10	1.45
Wooster	1.70	2.10
Western Kentucky	1.20	1.65

MID-CONTINENT

(Prairie prices posted 1-9-24)

Below 33 gravity	$1.00	....
33 to 35.9 gravity	1.25	....
36 to 38.9 gravity	1.40	....
39 gravity and above	1.50	....

(Magnolia prices posted 1-9-24)

	Jan. 19 1924	Jan. 20 1923
Below 28 gravity	$ .50	....
28 to 30.9 gravity	.75	....
31 to 32.9 gravity	1.00	....
33 to 35.9 gravity	1.25	....
36 to 38.9 gravity	1.40	....
39 gravity and above	1.50	....

(Humble Oil & Refining Company's Prices posted 12-27-23)

39 gravity and above	$1.40	...
36 to 38.9 gravity	1.30	...
33 to 35.9 gravity	1.15	...
30 to 32.9 gravity	1.00	...
Below 30 gravity	.90	...

(Texas Company's prices posted 1-10-24)

39 gravity and above	$1.50	...
36 to 38.9 gravity	1.40	...
33 to 35.9 gravity	1.25	...
Below 33 gravity	1.00	...

NORTH CENTRAL TEXAS

Corsicana (light) (Magnolia)	$1.40	...
Corsicana (light) (other companies)	1.40	...
Corsicana (heavy)	.50	...
Thrall	1.00	...
Powell	1.40	...
Mexia	1.40	...
Currie	1.50	...

SOUTH TEXAS

Rockdale-Minerva	1.00	1.50
Mirando	.75	...

SOMERSET

(Posted by Grayburg Refining Co.)

32 gravity and above	$1.00	...

Below 32 gravity, five cents reduction for each decrease of one half degree.

GULF COAST

All grades except Grade B at Blue Ridge and Pierce Junction	1.50	1.25
Blue Ridge (Grade B)	1.15	.80
Pierce Junction (Grade B)	1.15	.80

LOUISIANA-ARKANSAS

Caddo

	Jan. 19 1924	Jan. 20 1923
38 gravity and above	1.35	...
35 to 37.9 gravity	1.25	...
32 to 34.9 gravity	1.15	...
Below 32 gravity	1.00	...

Homer

35 gravity and above	1.35	...
33 to 34.9 gravity	1.25	...
31 to 32.9 gravity	1.15	...
Below 31 gravity	1.00	...

Haynesville

33 gravity and above	1.25	...
Below 33 gravity	1.15	...

Bull Bayou

38 gravity and above	1.30	1.40
35 to 37.9 gravity	1.15	1.30
32 to 34.9 gravity	1.00	1.25
De Soto crude	1.35	1.60
Crichton	1.15	1.25
Bellevue	1.15	.75
Jennings	1.50	1.25
Vinton	1.50	1.25
Edgerly crude	1.50	1.25

Smackover

26 gravity and above	$1.00	$ ...
25 to 25.9 gravity	.85	...
24 to 24.9 gravity	.75	...
Below 24 gravity	.65	...

El Dorado

33 gravity and above	1.35	...
Below 33 gravity	1.25	...

Stephens District (Atlantic)

(Posted by Atlantic Oil Company 12-29-23)

28 gravity and above at 60 degrees	$1.05	...
26 to 27.9 gravity at 60 degrees	1.00	...
23 to 25.9 gravity at 60 degrees	.85	...
Below 23 gravity at 60 degrees	.65	...

WYOMING-MONTANA

Wyoming

Elk Basin	$1.40	$1.70
Grass Creek	1.40	1.70
Rock Creek	1.10	1.35
Lance Creek	1.35	1.70
Mule Creek	.70	1.10
Big Muddy	.85	1.25
Salt Creek	1.00	1.15
Osage	1.35	1.60
Hamilton Dome	1.40	...
Pilot Butte	1.10	....
Landers	1.10	.80
Torchlight-Greybull	1.40	...

Montana

Sunburst	.70	...
Cat Creek	1.40	1.60

CALIFORNIA

(Crude Oil Prices at the Well)

Los Angeles and Orange Counties

14 to 19.9 gravity	.60	.60
20 to 20.9 gravity	.61	.62
21 to 21.9 gravity	.62	.65
22 to 22.9 gravity	.63	.70
23 to 23.9 gravity	.64	.75
24 to 24.9 gravity	.65	.80
25 to 25.9 gravity	.66	.85
26 to 26.9 gravity	.67	.90
27 to 27.9 gravity	.68	.95
28 to 28.9 gravity	.69	1.00
29 to 29.9 gravity	.70	1.05
30 to 30.9 gravity	.71	1.11
31 to 31.9 gravity	.72	1.17
32 to 32.9 gravity	.73	1.24
33 to 33.9 gravity	.74	1.31
34 to 34.9 gravity	.75	1.38
35 gravity and above	.76	1.45

CANADIAN CRUDE

*Petrolia	2.03	2.38
*Oil Springs	2.25	2.45

*Plus 52½ cents bounty.

AJAX

DRILLING ENGINES

Genuine Ajax Engines and parts are obtainable at all branches of the

National Supply Companies

AJAX IRON WORKS — Corry, Penna.

"Famous in every Oil Field"

AJAX ENGINES

See Front Cover this Week's Oil Weekly

We carry in our Houston warehouse a large and complete stock of Harrisburg seamless forged products, line, casing and drill-pipe couplings and bull plugs; also largest stock of boiler tubes, seamless, lapweld, and charcoal iron, in the Southwest. Also complete stock in Tulsa.

For prompt delivery to any point in Texas, Oklahoma, Louisiana and Mexico, address

Harrisburg Pipe & Pipe Bending Company of Texas

Houston, Texas. Telephone Preston 5540—P. O. Box 1133

SINCLAIR'S SIGN of SERVICE SATISFACTION and SECURITY

The Stripes Signify~

1. Large crude oil reserve.
   (Through affiliated Companies)
2. Modern refineries.
3. Petroleum products for general industrial demands.
4. Facilities for prompt domestic and foreign shipments.
5. Fair prices all the time.
6. Merchandise and service guaranteed.
7. Personnel proficiency in oil operations.

SINCLAIR REFINING COMPANY

New York, Sinclair Oil Bldg., 45 Nassau St.
Chicago, 111 W. Washington St.
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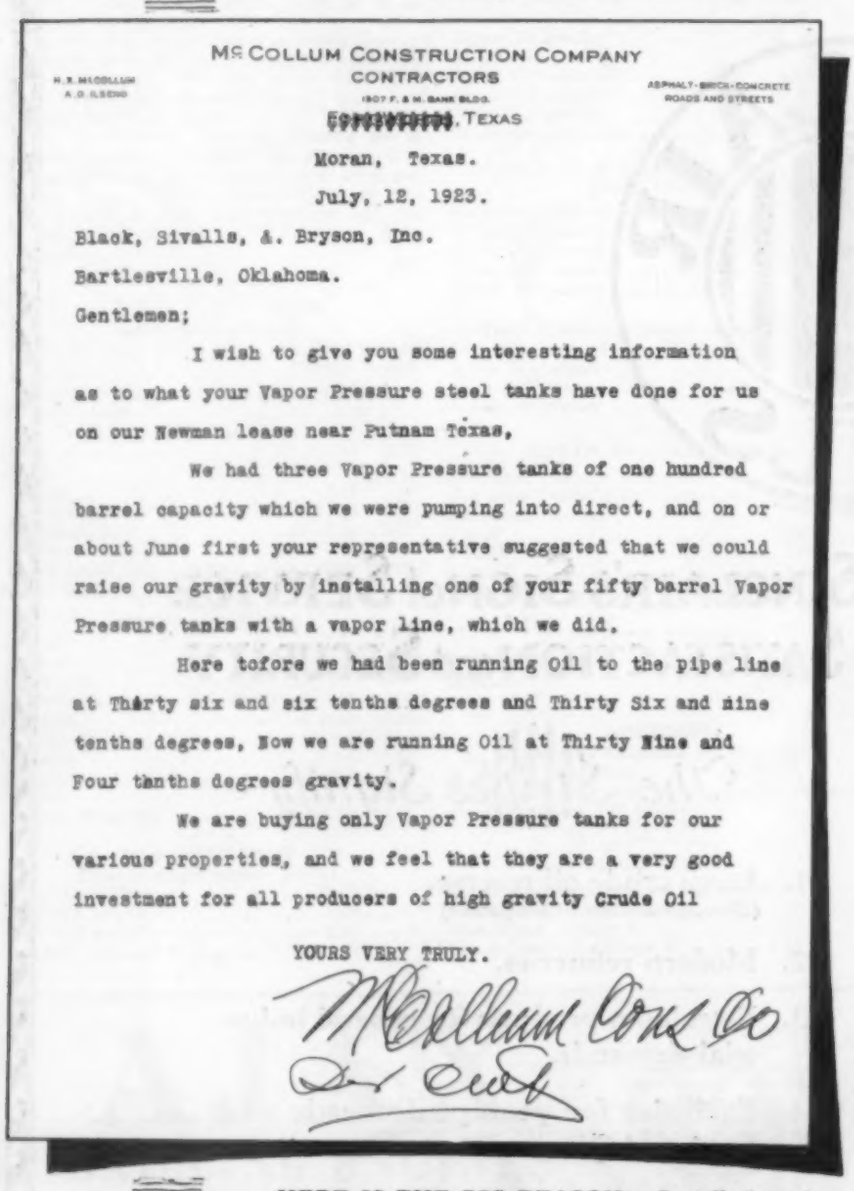
PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

Indisputable Evidence No. 6



Mc COLLUM CONSTRUCTION COMPANY
CONTRACTORS
H. K. McCOLLUM
A. O. GLEDHILL
1307 F. & M. BANK BLDG.
ASPHALT - BRICK - CONCRETE
ROADS AND STREETS
[illegible], TEXAS

Moran, Texas.

July, 12, 1923.

Black, Sivalls, & Bryson, Inc.

Bartlesville, Oklahoma.

Gentlemen;

I wish to give you some interesting information as to what your Vapor Pressure steel tanks have done for us on our Newman lease near Putnam Texas,

We had three Vapor Pressure tanks of one hundred barrel capacity which we were pumping into direct, and on or about June first your representative suggested that we could raise our gravity by installing one of your fifty barrel Vapor Pressure tanks with a vapor line, which we did.

Here tofore we had been running Oil to the pipe line at Thirty six and six tenths degrees and Thirty Six and nine tenths degrees, Now we are running Oil at Thirty Nine and Four thnths degrees gravity.

We are buying only Vapor Pressure tanks for our various properties, and we feel that they are a very good investment for all producers of high gravity Crude Oil

YOURS VERY TRULY.

McCollum Const Co

We are Buying Only Vapor Pressure Tanks, They Are a Good Investment For All Producers.

It isn't mere sentiment or friendship for us that is causing the McCollum Construction Company to buy only Perfection Vapor Pressure Tanks for its various properties.

HERE IS THE BIG REASON: Installation of our tanks has made it possible to add on almost three degrees in gravity to the crude run to the pipe lines.

That means not only more oil sold, but also a higher price since all the pipe lines now are buying on a gravity basis.

Hunt up one of our representatives. Get him to install a battery and you too will agree that the transaction was an investment instead of an expense.

Black Sivalls & Bryson
INC.

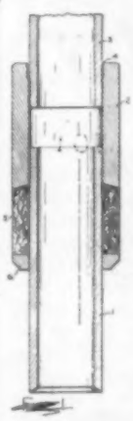
BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Cementing Casing May Be Eliminated by New Shoe

A casing shoe that will eliminate the necessity of cementing and at the same time prevent encroachment of water or other fluids from above has been patented by John W. Chambers, William L. Nell and A. A. Kuehn of Wichita Falls, Texas, and is now being sold under the trade name of K-N-C set shoe. The accompanying drawing offers a sectional view of the shoe, which can be used on both shallow and deep wells, and makes it possible to set casing in almost any formations and secure a good shut off without cementing.



The drawing shows tubular member (1) extending several feet below the shoe proper, and same serves as a guide with the interior of the lower end formed into cone shape. Tubular member (2) is threaded over the guide, while the pipe or casing (3) is threaded into the tubular member (2) and extended to the surface. The unthreaded space (4) in the top of the tubular member (2) serves as a guide, and also to prevent the tubular members (2) and (1) from bending under pressure. (5) is an expansive material such as rubber, fabric, or the like, which will expand under pressure when the lead collar (6) slides upward under the weight of the casing or pipe. The collar (6) is prevented from slipping downward on tubular member (1) while preparing to lower to the bottom of the hole by applying a small quantity of solder on tubular member (1) just below the collar.

In making use of the K-N-C set shoe, a hole is drilled to the desired depth or to the top of the producing formation, and the hole is then drilled several feet deeper with a smaller bit or tools to provide a close fitting position for the guide (1) on the lower end of the shoe. When the set shoe is placed in position in the hole, the collar (6) rests on the bottom of the larger hole, and the application of the weight of the casing or pipe causes the guide (1) to slide a few inches through the collar (6), thereby making the material (5) perform its duty of expanding outward into the walls of the hole, thus preventing water or any other undesired fluids encountered above from leaking through the casing seat and mixing with the oil or gas formations being tested.

A left hand thread is provided on the guide (1) to eliminate any danger of it becoming unscrewed when the well is being drilled deeper, or worked over with the bit. In the vent a commercial producer is not obtained after the casing has been set and a test made, the casing and shoe are easily pulled from the hole, leaving only the material (5) and collar (6) to be drilled up, and the latter offers virtually no resistance since it is made of lead.

The Petrolia Supply Company of Wichita Falls has a contract to manufacture and distribute the K-N-C set shoes, and will furnish additional information on request.

New Gas Engine Put Out By Titusville Company

A new improved two-cycle gas engine for oil field use has recently been announced by the Titusville Iron Works, Titusville, Pennsylvania.

This engine has been thoroughly tried out and has been found satisfactory. Its special features are said to give it superiority for use in oil fields.

The crank shaft is die-cast, making it possible to remove the liner with ease. An ordinary workman can remove the liner without any difficulty. This does away with the expense of having to have a high-class mechanic repair the engine if the liner gets out of order.

Hand-forged steel is used in the connecting rods.

The cross-head slide is of the bored-guide construction with a shoe adjustment both above and below.

A screw and wedge adjustment is used in the cross-head pin and bearing, which makes this part of the engine very accessible, and adjustments can be made with a minimum of time and effort.

One of the most distinctive features of the engine is the double cylinder head construction. This enables the cylinder heads to be removed quickly, and the water jacket and cylinders can be cleaned easily.

The exhaust nozzle is constructed of two pieces.

The engine is equipped with pistons having two rings on the pumping end of the piston, thus assuring an even intake pressure.

The inlet valve covers a large area, which reduces the necessity for a spring.

This engine has been known to double its rated horse power on a sustained pull. Further particulars may be secured from the company upon request.

ROTARY CATALOG ISSUED

The oil industry will be interested in a new catalog published by the Beaumont Iron Works Company, Beaumont, Texas.

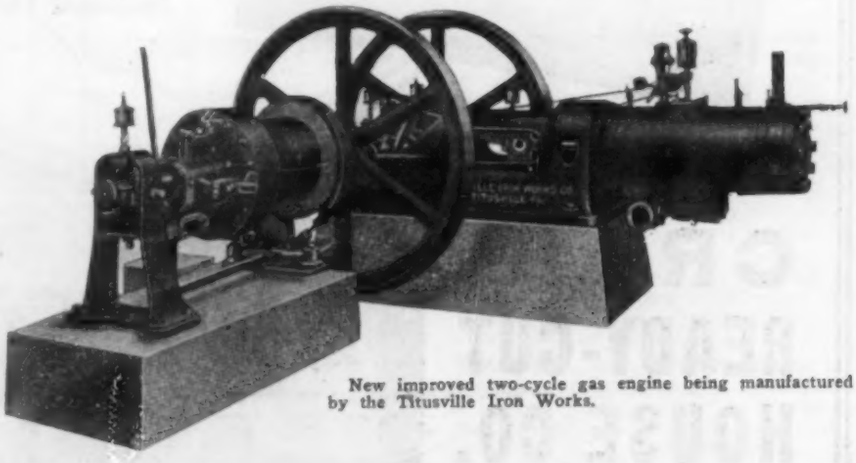
This catalog deals with Dreadnaught Drilling Machinery and pipe line and refinery supplies. The Beaumont Iron Works Company specializes on rotary equipment and the goods described in their new catalog cover every phase of this type of drilling equipment.

The catalog is furnished with hard pasteboard backs and will withstand hard treatment. It is constructed so that new pages can be added from time to time as the company puts new equipment on the market.

Much useful information for rotary operators is contained in this catalog. Copies may be obtained upon request to the company at Beaumont, Texas, or to their representative, The Frick-Reid Supply Company, Tulsa, Oklahoma.

SUCKER ROD BOOKLET

"Concerning Sucker Rods" is the title of a pamphlet recently published by the S. M. Jones Company, Toledo, Ohio. This booklet deal extensively with sucker rods and gives much valuable information for field men. Copies may be secured upon application to the company.



New improved two-cycle gas engine being manufactured by the Titusville Iron Works.

The OIL WEEKLY will print on this page data on new oilfield equipment, improvements on old equipment, news of new catalogs, bulletins, etc. This department is handled exclusively by the editorial department and has no connection with the advertising department. Data will be carried on anything which the editorial department thinks of interest to our readers, regardless of whether or not the manufacturer is an advertiser in The OIL WEEKLY.—Publisher.

"CRAIN"
SECTIONAL (PORT-ABLE) HOUSES
for the Oil Industry

—Here are some CRAIN SECTIONAL (Portable) HOUSES that were "erected over-night" by the employes of one of the big Gulf Coast operators.

—Notice their attractive appearance—their sturdy construction, their completeness — they are homes worth while that will meet your housing problems.

—This same operator will tell you CRAIN PORTABLE HOUSES, Garages, Mess Halls, Office Buildings, etc., offer practically 100% salvage.

—Do not need skilled carpenters for erection.

Write for Catalog on CRAIN (Portable) Sectional Houses — Immediate service

CRAIN READY-CUT HOUSE CO.

HOUSTON - - TEXAS

LETTERS OF Paul Peebles P.S.G.

mi deer cleopatry

cleo hunny I no I aint rit 2 yu in a long time like i ort 2 of, but hunny I hav bin verry busy & it was not because I don't care for yu enny moar, so do not git no sutch noshuns as that in yore pretty hed. I am still strong for yu as horse reddish, an yu no I am yore true 1, don't yu cleo hunny?

just recent I hav bin puttin in most of mi time studyin up sum big werds 2 go in the speach whitch I will hav 2 make at the geology meetin when it comes off in Huston next spring, beins as how I want 2 hav a good speach for that occashion so I can startle the members of the great profeshun of whitch I am 1 of the leedin lites & whitch expeks mutch of me. well they will not be disappointed, eh cleo?

anuther thing whitch keeps me pritty busy rite now is givin opinyuns on the situwashun for the comin year. yu no cleo it has bin pritty hard times in the oil biziness last year, & if yu do not no it I no it enuff for both of us, on account of how hard it has bin for me 2 eet sumtimes but now it looks differenter. in fack it looks like reel good times ahed & every day I am gettin letters & telegrams 2 tell sum of the big co men what 2 expeck so they can make there plans for the year accordin. they all want 2 no what the produckshun will do & also the consumption, an as it is noed by all that I hav kept close track of all the feelds whitch I discovered or giv favorable opinyuns on, it is also noed that I can giv pritty acrate forecasts of what will happen.

yu remember last year about this time I tole yu it was goin 2 be a bad year—an see what it done. I sed then that they was goin wild on drillin & wud git so mutch oil in california that they wud not no hardly what 2 do with it, & also in other plases 2 numerous 2 menshun. well see what they done.

Well I had not mutch moar than tell them 2 be carful what they done till the produckshun curve cummensed 2 curvin up an also the deduckshun curve went down till the fellers what made the oil did not get 2 deduck hardly enuff 2 liv on account of the price of oil went so low. the only price thing that went up last year was taxes, & they shore was histed evry time it was a half a chanct. well, cleo hunny, that is histry now, an I am only menshunin it on account of I told yu so it wud be like that.

but for the pres. year it is difrent, an this is the kind of a report I am givin 2 mi clients whitch astes me what 2 expeck for 1924. I cud a told them last nov. if they had a ask me & it wud a save sum of them munny if they wud a took mi advise & not sell none of there oil till the price went up whitch I noed it wud do.

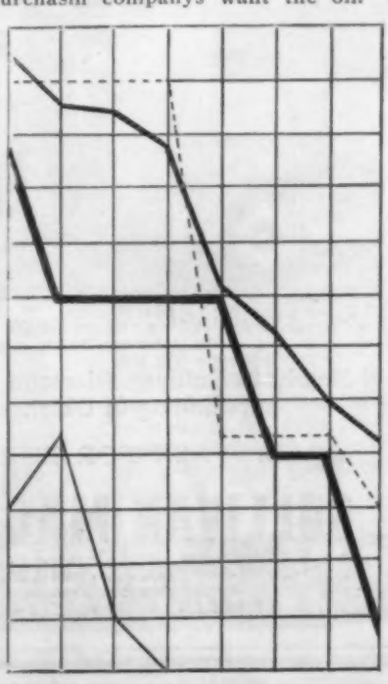
This is what I say about the oil bizness for 1924, towit:

There will be a hevy fall off in storage enduring the first few weeks, till after the tax assessor goes round, then it will rise 2 git reddy for the gasline seeson. storage from then on will go up & down acordin 2 how mutch is put in & tooken out, & viseversa.

the volume of produckshun will be governed largely bi the number of new wells drilled & the produckshun of same & also how producin wells hold up & how steddy they are pumped if at all, if the feelds whitch has bin causin so mutch trubbel, like santa fee springs & corseycana goes off & no moar big pools is found in the meen time, produckshun will be normal. if operators insists on drillin sum of the good terrytory whitch I hav passed on favorable, it will be anuther flood of oil & the price will go down agin.

now as to consumpshun. sum of the crude oil will go 2 refineries & sum will vaporate in 1924 as formerly. also sum will be spilled & wasted & sum will ketch fire & bern up, but most of it will be used 2 make gasoline & kerosene & fuel oil, an some lube. the consumpshun of gasline will depend upon how menny fords is put out whitch will be considerable. the demands of the refineries will be acordin 2 how mutch they think they can sell & how mutch munny they can borry 2 buy with.

then comes the important item of prise, whitch is the main considerashun. the prise will be accordin 2 the law of supply & demand & how bad the purchasin companys want the oil. if they want it bad the prise will go up, & if they get moar than they want the prise will go down. this is in the case of crude oil. also in sum feelds the prise will depend on what kind of oil it is & prises in difrent parts of the country will be difrent accordin 2 where it is at.



now wen it cums 2 refined oil it is a difrent subjeck. the gen. publick is intrested in this. only they dont care what enny thing costs escept gasline, & they kick about that. the prise of gaslene will be acordin 2 the supply & the demand & the standerd oil co whitch has headquarters closest 2 the place where it is sold & will be controled principul bi the latter. 2 this prise will be added the gaslene tax escept in them few states where it ain't none. them states what ain't got no tax will probly get 1 & taxes is the 1 thing about oil whitch is shore 2 go up.

the produckshun of natral gas will depend largely upon the performance of the old wells & the new wells whitch comes in gassers. if they are in convenient plase they will be used for gas & sum times for makin casin hed gas. this will not have no barin on the prise of oil in the gulf coast however.

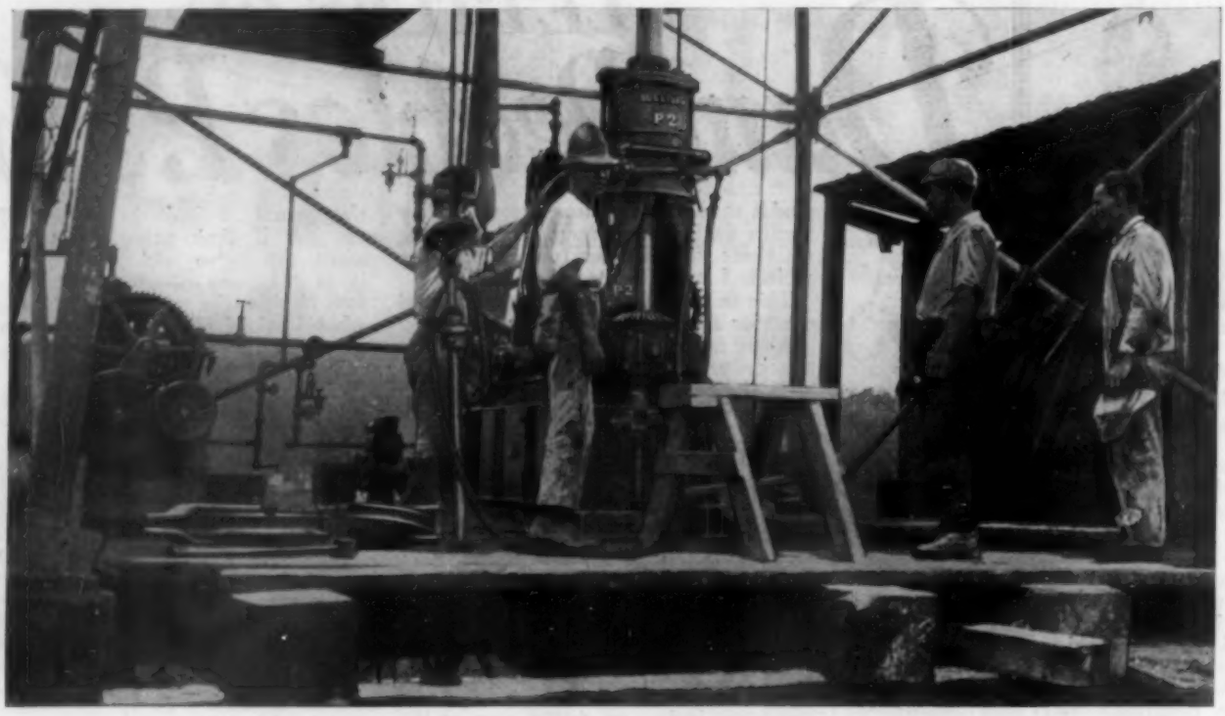
I have made a graft of the situashun whitch is attached 2 this report. yu will sea that it has got 4 lines on it. 1 line is for produckshun & 1 is for consumpshun & 1 is for supply & the other is for demand. yu will note that these lines goes up & down & acrost & none of them seams 2 no where they are goin, whitch is the situashun eszackly.

well cleo, hunny, yu bein a woman yu will not understand all yu no about this report & the graft, but it will be duck supe for the fellers what noes how 2 dope out sutch things. evry co that has got mi report has immeditly called a meetin of the directers & it has bin three or four price raises caused by this report alreddy & drillin campaigns is bein layed out in acordance there2. a copy of mi graft was before the meetin of the burbank operators whitch has desided 2 commense drillin agin but go slow.

the graft whitch I hav made is a speech. yu do not need to be a experents grafter 2 git the benyfit of this. I am thinkin about gittin me a patent on it, because it is the only graft on the market whitch works just as good rite side up, upside down or sideways. wile it is designed bi me for the oil bizness, it can be used for enny kind of graftin whitch aint agin the law, escept tree graftin. anuther beauty about it is that it is drawed in squares so it can be used for a map of states where they hevs sec. T. R., in whitch case the criss cross lines can be for rodes & pipe lines &etc. so yu see hunny it is a reel handy thing.

well hunny as soon as I git a breethin spell I am goin 2 take a mutch needed rest & I shore am goin 2 cum 2 sea yu then.

yore lovin paul.



Diamond Drilling for Oil Has "Arrived"

When the Panuco-Boston Company brought in a well with the Sullivan Diamond Drill in the Tampico field in December, 1921, diamond drilling for oil became a proven success—no longer an experiment.

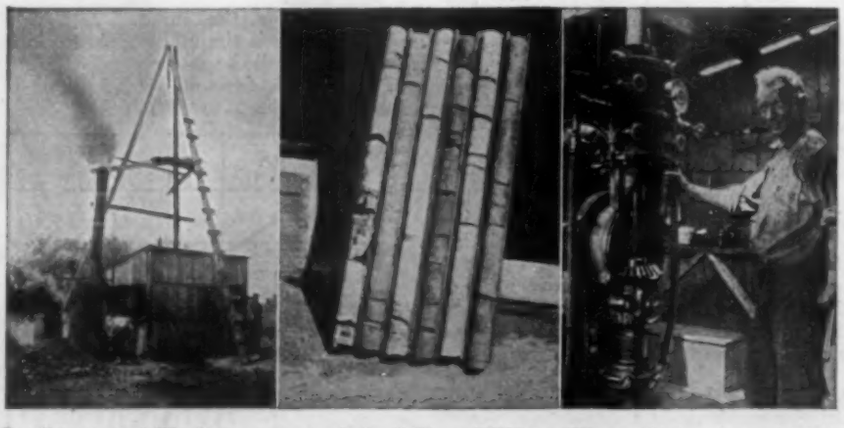
Today Sullivan Diamond Drills are in successful oil field use in Mexico, Texas, Oklahoma, California, Colorado, Montana, Santo Domingo, South America, etc.

For deep wildcatting or production, the "P-2" and "FK" heavy duty drills are available, removing cores from 3¼ to 7 inches in diameter, and good depths of 300 to 5000 feet.

In all formations and in all varieties of oil field drilling, the diamond drill has proven its value.

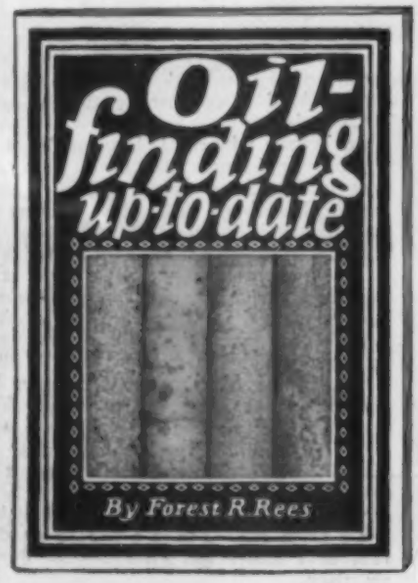
In furnishing geological data, in low cost for outfit, transportation, power and labor, in drilling speed, in adaptability to drilling conditions,

Sullivan Diamond Drills Stand Foremost



For "structure drilling" we recommend the Sullivan "CN" or "N" standard coal prospecting drills, removing 2-inch cores and good for 500 to 2000 feet.

Nearly 30 Sullivan Diamond Drills have been engaged in structure finding in Oklahoma during the past two years



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SULLIVAN MACHINERY COMPANY

122 S. Michigan Ave., Chicago

DALLAS
Western Indemnity Bldg.

GEO. E. FAILING, State Agent
Tulsa Garber, Okla.

SQUEAKS from the BULL WHEEL

One On The Chief

The head of a large firm, while passing through the packing room, observed a boy sitting on a case of goods and whistling cheerily.

The chief stopped and looked at him frowningly.

"How much do you get a week," he demanded.

"Ten dollars," came the brief retort.

"Then here's a week's money; now clear out."

The boy pocketed the money gleefully and departed.

"How long has he been in our employ?" the chief inquired of the shipping clerk, who was perched nearby on his tall stool.

"Never, so far as I can remember," was the unexpected reply. "He just brought me a package from another firm."

Technical Language

"How do you feel?" asked the physician who had been called to attend the seamstress.

"Oh, sew, sew, but I seam worse today and have stitches in my side."

The doctor hemmed and told her she would mend soon.—Kreolite News.

Forewarned

"Will that new kind of collar you advertise make me look like that fellow in the ad?"

"Well, it might."

"Then let me look at your other styles, please."—Public Ledger.

Bert Jones: "Who was that guy you were talking so nice to?"

Jack Sheppard: "Aw, that's my old family druggist."

Bert: "What did he say?"

Jack: "No."

The Green Flag

Mr. Moriarity, who kept a saloon, met Mr. Driscoll, who was a railway conductor.

Says Mr. Moriarity: "What does it mean when you have a green flag flying at the tail end of your train, Mr. Driscoll?"

"It means that another one is coming," was the answer.

The next day Mr. Moriarity was seen pushing a baby perambulator up to the street, with a green flag flying behind—Wroe's Writings.

The Sponger Sponged

Indignant Lady—Yes, I know that Mrs. Brown now. I just happened to go around to her place at tea-time three times last week, and each time she gave me sponge cake!—Bystander.

There was a young lady named Maude
Who was rather a social fraude.
In a ball room, I'm told,
She was haughty and clod,
But at home on the sofa—Oh Laude!

Effie—Why hasn't daddy much hair?

Mother—Because he thinks a lot, darling!

Effie (pause)—But why have you got such a lot, mummie?

Mother—Get on with your breakfast!

Sophistication

Teacher—Our lesson today is on wading birds. One of them is the stork. What are you laughing at, Dorothy?

Little Dorothy—Oh, teacher, the idea of there being any such thing as storks!

Hard Boiled

The black-haired waitress, very much out of sorts, sailed haughtily up to the table at which sat the grouchy customer. She slammed down the cutlery, snatched a napkin from a pile and tossed it in front of him.

Then striking a furious pose—

"Whatcha want?" she snapped.

"Coupla eggs," growled the diner.

"How ya want 'em?"

"Just like you are."

Easy to Answer

Johnny—Mother, do I have to wash my face?

Mother—Certainly, dear.

Johnny—Aw, why can't I just powder it, like you do yours?

—Exchange.

Partners Again

She (as they dance)—Where have I met you before? There is something very familiar in the way you put your arms around my waist.

He—Why, don't you remember? I was your first husband.

—Elmira (N. Y) Advertiser.

Small Girl (to mother overhauling furs in view of winter)—Mother, what did moths eat before Adam and Eve wore clothes?—Punch.

Lawless Proceeding

The teacher was giving the class a lecture on "gravity."

"Now, children," she said, " it is the law of gravity that keeps us on this earth."

"But, please, teacher," inquired one small child, "how did we stick on before the law was passed?"

Also Like a Fish

Bella—Dick's awfully poetical. When I accepted him he said he felt like an immigrant entering a strange country.

Donna—Well, so he was!

Bella—An immigrant, why?

Donna—Wasn't he just "landed"?

Ole—Tillie, will you marry me?

Tillie—Yas, Ole.

A long deadening silence falls. Finally it is broken.

Tillie—Vy don't you say something Ole?

Ole—Vell, I tink Oi say too much alreddy!

"Have you read Scott's novels?"

"All but his 'Emulsion.' I have seen it advertised, but I have never been able to get a copy."

Why He Went

Crawford—I thought you didn't like to go to funerals.

Crabshaw—But this is the funeral of an old doctor who told me years ago that I couldn't live.—New York Sun.

"She Never Told Her Love"

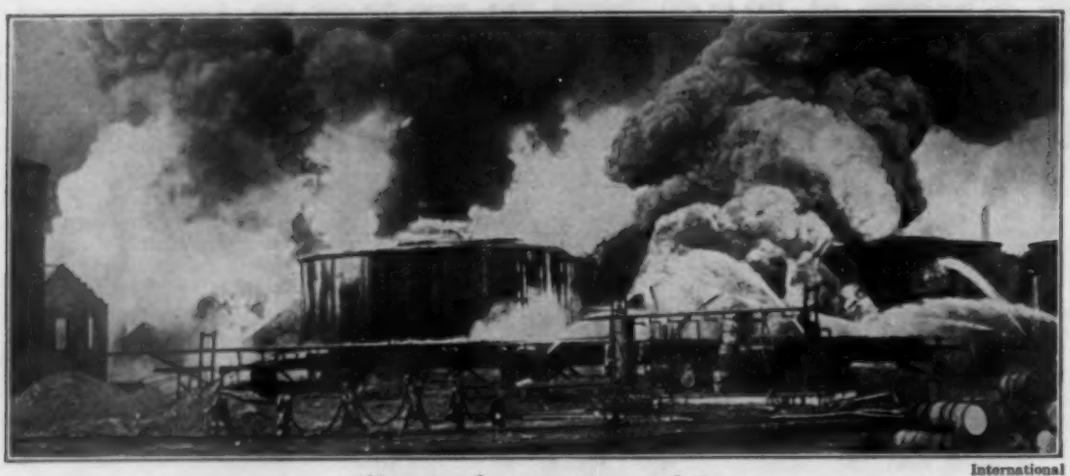
His Fiancee: Yes, Titus, I loved you when I first met you.

Titus Canby: Why'n time didn't you say so then? Here I've gone an' wasted $4.25 courtin' you.

Satisfactory Drilling Service

We are equipped to drill either shallow or deep holes anywhere the "Bevers-Way"—the satisfactory way. Oscar C. Bevers has been drilling wells with rotary tools since the days of Spindletop. Bert Way has been drilling with cable tools for more than twenty-five years. Let us figure with you on drilling your next well.

BEVERS-WAY DRILLING CO.
CORSICANA, TEXAS P.O. BOX No 674



International

"Unpreparedness may prove costly"

When oil takes fire–

will your foam system extinguish it?

There is no time for experiment when lightning strikes an oil tank. You quickly learn whether you can put out the fire or not. Unpreparedness may prove costly.

Obviously, every business demands *sure, scientific fire protection.* And fire records prove beyond question that the *Foamite* System always protects oil, while many *home-made* "foam systems" do not.

Why Foamite Protection never fails when installed by Foamite-Childs engineers

Authentic data covering a period of years establishes this remarkable fact: Not a single tank of oil or gasoline has ever been destroyed when protected by a *Foamite* System designed, installed and maintained by Foamite-Childs fire protection engineers. Losses are held to 2% or 3% of the tank's contents.

The improved *Foamite* System shown above protects 22 tanks of refined petroleum. Storage is provided for 75,000 gals. of each chemical solution. Two independent pumping units (one in reserve) are capable of discharging over 8,000 gals. of Firefoam per minute. Maintained by Foamite-Childs regular inspection service.

On the other hand, tremendous losses are frequently sustained when *home-made* foam systems *fail.* Detailed comparisons of success with failure show what makes the difference.

Foreseeing every hazard, the fire protection specialist leaves nothing to chance

Foamite-Childs engineers have developed fire-protection as a definite, specialized science. They have concentrated on the control of oil fires, just as oil men have concentrated on production and refining and marketing. Through wide practical experience they know how to anticipate a score of contingencies any one of which may prove the vital factor in a crisis—emergencies that only a thorough knowledge of *fire* can foresee.

Every danger point correctly covered before fire breaks out

These men shape the foam protection system to each individual risk, modifying details so that they meet every emergency. They can determine precisely what any tank or group of tanks or refinery calls for, in quantity of chemical solutions, pumping power, pipe sizes, auxiliary hose connections, location of mixing chambers, and a dozen other variable essentials.

In short, the *Foamite* System as designed, installed, and maintained by Foamite-Childs engineers, eliminates guesswork. And the average cost of this sure protection, even on the largest tank farms, is less than the amount one bad fire costs you.

Our engineers will make recommendations and furnish rough estimates that place you under no obligation.

Foamite-Childs Corporation

Fire Protection Engineers and Manufacturers

786 Turner Street, Utica, N. Y.

Sales and Engineering Representatives in the leading cities of all countries

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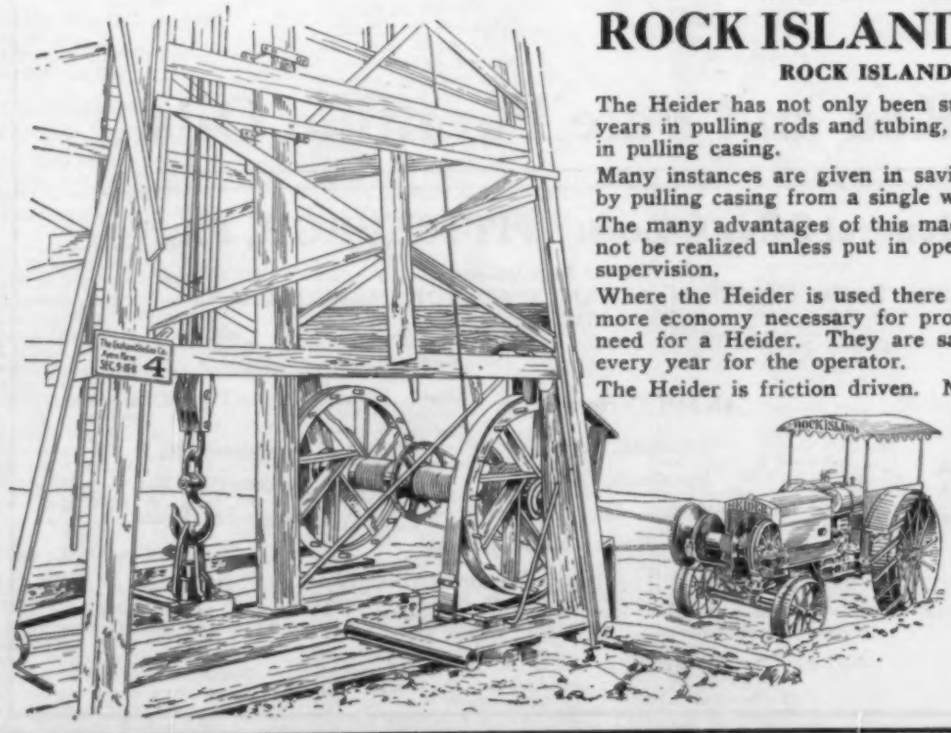

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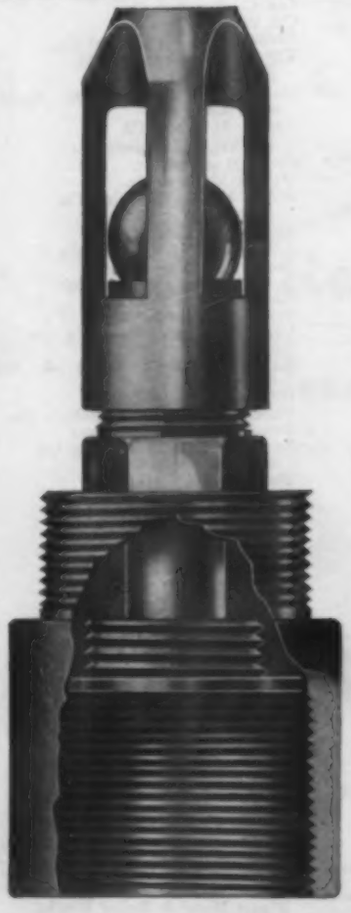

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THE ADAMS COMBINATION CUFF AND STANDING VALVE is simple in construction, design and inexpensive. It has not leather parts to wear out as in the old style leather washer standing valve, where the leather works loose from pumping or when it comes in contact with oil and gases, which, with their chemical action, softens and eats away the leather rings or washers, causing the valve to leak.

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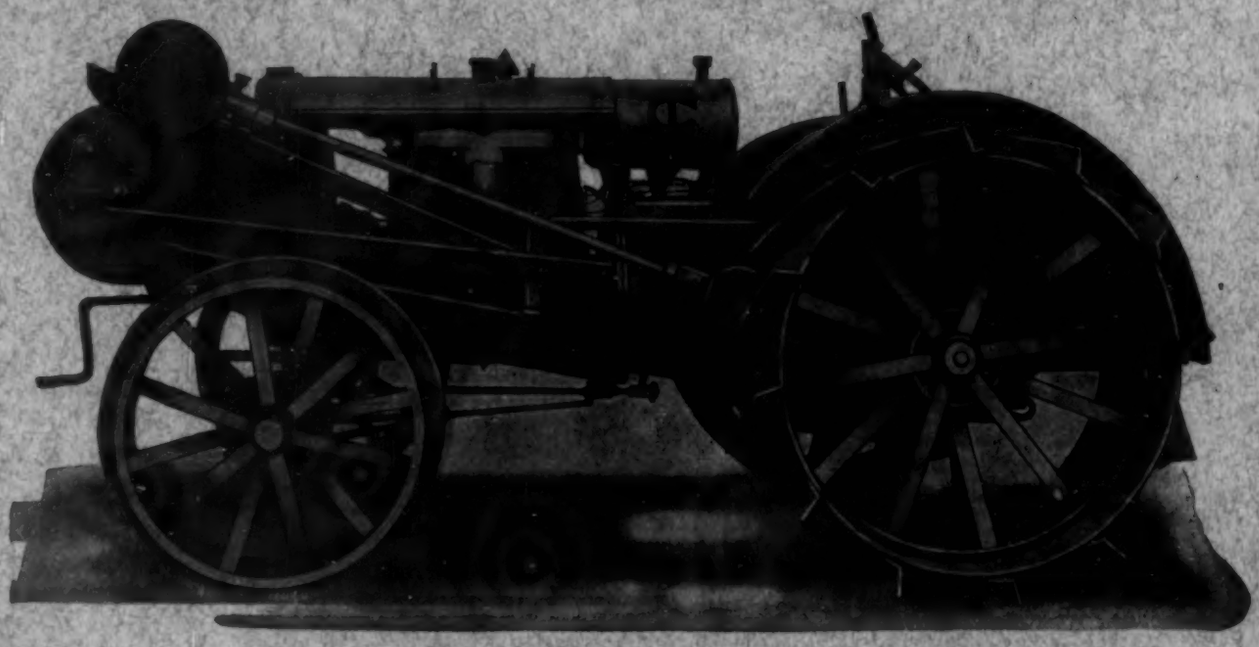
Houston, Texas

Twin City Tractor Hoist



BUILT TO DO THE WORK —NOT TO MEET A PRICE

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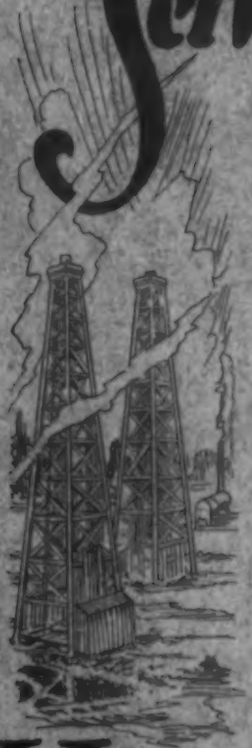
Serving Field Demands



When a wildcat well comes in drilling activities take on the aspect of an old-time gold rush.

The lone rig soon has the company of many others.

Horses and mules struggle belly deep through the mud, hauling the equipment from the nearest railway point to the field.

The one demand is for "service"—and here is where the field "Supply Store" really justifies its important place in the oil industry.

The day the field shows evidence of real and continued development, the supply companies erect their field stores, bring in their stocks, and give the operators immediate service.

These oil field supply stores carry stocks of Hughes Rock Bits, spare parts, and tool joints in every active rotary drilling field. Patronize them.

Hughes Products are nearly as indispensable to the field man as are the Supply Stores themselves.

HUGHES TOOL CO.

HOUSTON
TEXAS
Branch
LOS ANGELES
CALIFORNIA

The WAREHOUSE *of the* OIL PRODUCING INDUSTRY